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ABSTRACT

This document reports a study of the role of institutions of higher education in the development of countries in South-East Asia covering Burma, Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand and Viet-Nam. Emphasis is placed on the geographical, historical and social background; patterns of education within the region; higher education; education as a service and investment; economic problems and development planning in the region; characteristics of national economic development plans; the high-level manpower needs of development; social development and higher education; language policy and higher education; national development and qualitative implications for higher education; the structure and growth of post-secondary institutions; students, study and welfare; teachers, teaching and research; and regional co-operation and higher education. Major issues discussed include manpower, social and cultural projection of higher education, institutional patterns, students and studies, teachers and teaching, inter-regional co-operation, and a proposed South-East Asian Institute of Higher Education and Development. Appendices of related material and statistical data are included. Related documents are HE 004 651, HE 004 652, and HE 004 673. (MJM)

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higher education and development in south-east asia

Volume I *Director's Report*

by Howard Hayden

Director of the Study of the Role of Institutions
of Higher Education in the Development of Countries
in South-East Asia

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Some economic aspects of educational development in Europe. (IAU, 1961.)
University autonomy, its meaning today. (IAU, 1965.)

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Preface

The Study of the Role of Institutions of Higher Education in the Development of Countries in South-East Asia is the second project to be carried out under the Joint Unesco-International Association of Universities Research Programme in Higher Education. This programme, which constitutes a novel form of co-operation between an intergovernmental organization and an international academic body, was brought into being at the end of 1959. Directed by a Joint Steering Committee, its purpose is to carry out under the auspices of the two organizations, with the financial support of private foundations or such other private or public bodies as may be appropriate, a series of studies of important problems affecting the organization, operation and functions of institutions of higher education in the present world.

This study was set up with the co-operation and support of the Ford Foundation which generously authorized grants in the amount of $534,000 for its conduct. Work began in September 1961 and from then until April 1965 extensive inquiries were made into the actual and potential contribution of higher education in the countries of South-East Asia to the achievement of the goals of social and cultural development as well as its role in providing the knowledge and skills needed for their economic progress. A *Summary Report* on this work and the conclusions emerging from it was published in July 1965 and the present volume contains the full report of the study. Complementary volumes will include the reports of expert consultants to the study and a series of detailed country profiles.

The Joint Steering Committee is indebted to all those who helped to carry out this important undertaking and most specially to the chairman of its Commission of Experts, Sir John Lockwood, Master of Birkbeck College in the University of London and former Vice-Chancellor of the University, who died suddenly on 11 July 1965. Despite other heavy commitments in the United Kingdom and Africa, he had for four years contributed selflessly to the study, travelling extensively in the region, and bringing to the planning and evaluation of the inquiries which were carried out the stimulus of the keen mind of a distinguished scholar and gifted administrator. On behalf of all who were associated with the study we here pay tribute to Sir John for his devotion to the cause of higher education and for the warm generosity of his companionship.

The Committee's thanks are also due to the members of the International Commission of Experts, individually and collectively, for the advice and guidance they gave throughout the study as well as to the consultants for the specialized knowledge and experience they brought to bear on important parts of the undertaking.

The main burden of the work was inevitably borne by the directors of the study and its small staff in Kuala Lumpur, and the Committee is grateful to them for their devotion to a difficult and onerous task. Three directors each made a distinctive contribution to its accomplishment: Dr. Matta Akrawi served from September 1961 to December 1962 and was responsible, with Sir John Lockwood, for the initiation of the study and the successful conclusion of its first phase; Dr. R. M. Sundrum brought to the work the special skills of a political economist and statistician until March 1964; from then on the work went forward under the direction of Mr. Howard Hayden—a comparative educationist, he was responsible for making a synthetic analysis of the complex body of material assembled by the study and is the author of the present report.

Finally, the Committee wishes to express its appreciation to the Government of Malaysia and to the University of Malaya for the special facilities afforded to the study in Kuala Lumpur and to thank them as well as the governments and university institutions of the other South-East Asian countries associated with the study for their co-operation and assistance.

CONSTANTINE K. ZURAYK,
President, IAU

RENÉ MAHEU,
Director-General, Unesco

Co-Chairmen, Unesco-IAU Joint Steering Committee

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Foreword

The sudden death of Sir John Lockwood occurred before he had completed his foreword to this volume.
As a tribute to his memory the following text is reproduced from the foreword he wrote for the Summary Report *of the study.*

It is commonplace that the world of today is experiencing a more rapid transformation than at any time in human history. New nations striding on to the world stage with vivid hopes and ambitions and older nations that have been politically weak, socially unprogressive, and economically stagnant, are afire with the zeal for growth and development to bring them the prosperity and standing of the more developed nations. They see themselves opportunely placed to take advantage of the massive advances that have been achieved in science and technology and of the new strengths which industrialization can bring. But they are confronted by equally massive problems. On the one hand are deficient systems of education and shortage of well-educated and well-trained people to man development programmes; on the other, the intensive rate of population growth emphasizing and at the same time increasing the need to remedy the deficiency and the shortage.

The present study was jointly sponsored by the United Nations Educational, Scientific and Cultural Organization and the International Association of Universities with the generous financial support of the Ford Foundation and was organized under the direction of a Joint Steering Committee, of which the joint-chairmen were the Director-General of Unesco and the President of IAU. It was designed to examine the contribution to national development which is being made and which increasingly can and must be made by institutions of higher education in the countries of South-East Asia: Burma, Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand, Viet-Nam.

The responsibility resting upon the institutions to be consciously and deliberately recognizing national needs in the planning of their activities is clear. Human resource development is a natural and traditional function of universities. In the context of the modern societies of South-East Asia, this function has to be construed and interpreted in the light of national goals at the present day. These goals are not restricted to the achievement of economic growth, and a purely economic analysis is therefore inadequate.

Inseparable from them are the social objectives, the cultural purposes and the working out of political structures appropriate to progressive societies. Teaching and research have a common part to play in the realization of these national aims. There is nothing in such an assessment of academic policy to conflict with the traditional tasks of universities throughout the world in the transmission and advancement of knowledge.

The study has, therefore, looked at development in the broadest sense. To take a few examples, it deals alike with the general economic situation, the special types of manpower need, the range of educational requirements and the adequate preparation in quality and number of educators for schools, colleges, and universities, the problems of the present social and cultural imbalance of rural and urban communities, the questions posed by decisions on the use of national languages at all stages in education, and, what is a matter to which great importance is attached, the value of educational co-operation among the countries of the region in research and other programmes.

JOHN LOCKWOOD

Introduction

The procedures adopted to prepare this Study of the Role of Institutions of Higher Education in the Development of Countries in South-East Asia covering Burma, Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore,[1] Thailand and Viet-Nam are set out in Appendix I to this volume. It seems desirable, however, to give some indication here of the form in which the study has emerged, of the general pattern of the report on the study, and of certain factors of significance which affected the whole operation.

This first volume, the report on the study (subsequently called the report) is based in the main upon two sources: a set of country studies (subsequently called country profiles); and the work of three consultants appointed to explore certain vital areas in some depth.[2]

The country profiles are to be published as a second volume of the report. They contain the bulk of the statistical material on which the report is based. Each profile is a largely quantitative description of the higher education facilities of the country in a demographic and socio-economic setting, prefaced by a brief description of the first two levels of the education system, and concluding with a study of the relationship of higher education facilities to current plans for economic and social development.

The monographs of the consultants will be published as Volume III, Parts 1 and 2. They are:

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[1] The final draft of this report had been completed when the separation of Singapore from the Federation of Malaysia was announced. Where possible the report has been emended to meet this situation—even where this has proved impracticable, data for Malaya and Singapore are almost invariably to be found under separate heads.

[2] Their monographs are hereafter referred to by the surname of the consultant (see below).

High-Level Manpower for Development, by Guy Hunter;
Language Policy and Higher Education in South-East Asia, by Richard B. Noss.

The report commences with an introduction to the characteristics of the region: the physical, ethnological and cultural background is sketched in, and the patterns of educational systems within the region are traced.

Against this background economic, social and cultural problems are reviewed. After an attempt to reconcile the roles of higher education, both as an overhead of economic development and also as a social and cultural service, the major economic problems, and the plans in operation or under consideration for dealing with them, are outlined and the future needs for high-level manpower are discussed and assessed. Next, social and cultural factors in development are considered, and finally the major implications of both sets of factors, economic and social, on the development of higher education are established and discussed.

The report then turns from the general concept of the role of higher education within a developing society to the specific problems that are likely to be common to expanding institutions, reviewing such matters as types and structures of universities and other third-level institutions; the selection of students; the organization of courses; staffing; methodology; research; student welfare; and education abroad.

Finally, higher education is examined in its regional and global contexts, the forms and potential of regional inter-university co-operation are discussed and the outlines of a regional Institute of Higher Education and Development to assist in seeking solutions to a number of the problems that have been raised is sketched in.

An 'Afterword' to the report, 'A note on the Nature and Functions of the University' has been contributed by Dr. F. Cyril James, Principal Emeritus of McGill University, Montreal, Canada, and two appendixes deal respectively with the methodology of the study and with some of the financial problems of higher education: any more detailed treatment on a regional and comparative basis would need to be the subject of a special study.

The study has been conceived in terms of a wide and varied audience with a common interest in educational policy and practice, whether from the point of view of teacher, administrator, planner, sociologist, economist, comparative educationist—or student. The setting is regional, the field is primarily that of higher education, the theme one of socio-economic development—the problems are universal. In its narrowest sense the report is addressed to policy makers and their advisers—that is to say, to Ministers of Education acting in a national or a joint regional capacity, to their technical officers, and to members of bodies engaged in economic or educational planning. These key groups bear the responsibility for major decisions of policy, of finance, of balance in educational development, of investment in the strengthening of a national infrastructure and stimulating creative cultural patterns. More broadly, the report is conceived in terms of the needs and interests of all those engaged in higher education as teachers, research workers, administrators, or members of university councils. Finally, it is written on the hypothesis that all levels of the educational system are inextricably interdependent. Accordingly although the field of the study is South-East Asia, the assembled data are regional and the argument is in regional terms, it is hoped that its observations and findings will have a general value for those engaged in programmes of technical assistance in the fields of advanced studies, for students of comparative education, and for those engaged in studying, teaching or practising the techniques of educational planning, wherever they may be.

The preparation of the report has suffered from a number of major impediments. The political situation in some of the countries of the region is such that it has not been possible either to give an up-to-date picture of the situation of higher education, or to make projections with any pretention to complete validity. For example, in view of the major changes taking place in Burma both socio-economically and educationally the Government is naturally reluctant to indulge in or encourage premature evaluation. Again, the political and economic future of the countries that once formed Indo-China can scarcely be predicted as this report is written. Similarly, only a year after the Federation of Malaysia has been proclaimed, it is early to predict the type and indeed the location of the institutions of higher education which will best serve the interests of Sabah and Sarawak as well as those of Malaya, particularly since Singapore is no longer a constituent State of the federation.

Next comes a difficulty of a very different nature, and on a much smaller scale, but one not altogether unconnected with the confusion of political issues. This is the general statistical situation in the region. Despite the activities of Unesco and ECAFE in this field, the work of the national banks, and the growth and establishment of government statistical services, it is still not easy to attempt to collect essential information that is either up to date, complete, or in a form which enables comparisons to be made. This is true of simple demographic and educational data. The situation is much worse when higher education is involved, and when in addition to the usual governmental sources it is necessary to seek the assistance of autonomous or semi-autonomous universities. Some indication of the situation may be afforded by a consideration of the difficulties of the Robbins Committee on Higher Education in the United Kingdom in a much more elaborately organized situation[1] when it was decided that the committee's recommendations had to be established on a firm statistical basis.

Three vital aspects of higher education are touched upon but lightly in the report. The question of university autonomy, and the relationship between a university and the government which may be its sole major financial source, is the subject of a special study by the International Association of Universities,[1] one of the two sponsoring bodies of this study; in consequence it has only received incidental treatment here.

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[1] See *Higher Education* (London, HMSO, 1963, Cmnd. 2154), *Report*, para. II; Annex, paras. 1-12; Appendices I-V.

A further deliberate omission is any detailed work on university curricula. This is a field for a number of specialist inquiries and apart from a brief treatment of the organization of curricula it is only as a matter for further detailed and co-operative study that it appears in Chapter 12.

Finally, there has arisen a problem which derives from the interpretation of the term 'higher education'. The Unesco Conference on the Development of Higher Education in Africa held at Tananarive in 1962 included 'all types of education of an institutional nature, such as universities, university colleges, liberal arts colleges, technological and technical institutes and teacher-training colleges, for which the basic entrance requirement is completion of secondary education, and the usual entrance age is about 18 years, and in which the courses lead to a named award (degree, diploma or certificate)'.[2]

A circular letter issued by the study in its first year defined its field as 'those institutions which offer at least two years of study beyond the standard secondary school (or its equivalent) of the country concerned'.

There are difficulties in applying any definition in uniform fashion because of the wide variety of institutions to be found in the region, both as regards types of third-level educational provision, and also in the range of secondary institutions. A flexible approach has been adopted, relying heavily on the practice of the educational authorities in the respective countries. A fairly sharp distinction, however, has been drawn between 'education' and 'training'; and certain types of vocational training with little academic content, concentrating on certain specific practical skills, have perforce, in a number of cases, been omitted from consideration. In this category would fall the considerable number of training programmes carried out by technical ministries and departments of government for their future employees, even when they require completion of a secondary education for admission.

Even so, it has proved exceedingly difficult to discover all the courses of non-university post-secondary instruction, and with the exception of major institutions such as the Singapore Polytechnic or Thonburi Technical Institute in Thailand it has been equally difficult to obtain statistical or qualitative information about them. A preliminary listing, to which this report owes much, is to be found in the study of technical training facilities in the region made by H. R. Mills for the Colombo Plan.[1] This field needs a specialized study of its own: nevertheless a model has been constructed to suggest possible lines of development for technical and technological education.

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[1] *University Autonomy*, International Association of Universities, Paper 7 (Paris, IAU, 1965). This publication is based upon a paper by Sir Hector Hetherington and comments by fifteen members of the Administrative Board of the IAU.

[2] *The Development of Higher Education in Africa: Report of the Conference on the Development of Higher Education in Africa, Tananarive, 3-12 September 1962*, Preface and p. 97 (Paris, Unesco, 1963).

The basis of the study is historical rather than analytic. It will need to be followed up by detailed investigations conducted by the institutions of higher education and by the national planning authorities acting in concert, through a co-ordinating agency. For these detailed surveys a full-scale manpower study at all levels in each country will be required, together with a translation of these needs into the appropriate educational grades of the country. Such is one of the themes of the last chapters of this report. It is hoped that the study will serve to stimulate such a series of investigations and partnerships, and the establishment of machinery for combining them, an essential preliminary to any effective planning, whether educational, social or political in the development of the countries of South-East Asia.

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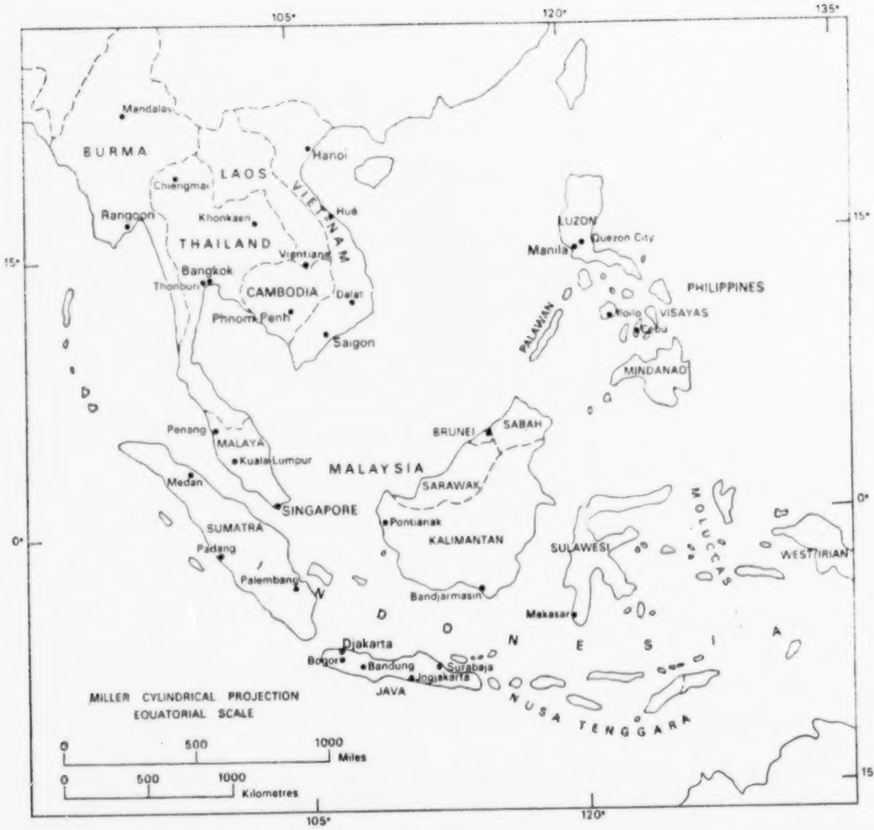
[1] *Handbook of Training Facilities at the Technician Level in South and South-East Asia*, second edition (Ceylon, Colombo Plan Bureau, 1964).


105°
120°
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105°
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Mandalay
BURMA
Rangoon
LAOS
Chiengmai
Khonkaen
THAILAND
Bangkok
Thonburi
Hanoi
Hué
VIETNAM
Vientiane
CAMBODIA
Phnom Penh
Dalat
Saigon
LUZON
Quezon City
Manila
PHILIPPINES
PALAWAN
Iloilo
VISAYAS
Cebu
MINDANAO
Penang
MALAYA
Kuala Lumpur
MALAYSIA
SINGAPORE
BRUNEI
SABAH
SARAWAK
Medan
SUMATRA
Padang
Palembang
Pontianak
KALIMANTAN
Bandjarmasin
SULAWESI
Makasar
MOLUCCAS
WEST IRIAN
INDONESIA
Djakarta
Bogor
Bandung
Surabaja
Jogjakarta
JAVA
NUSA TENGGARA
MILLER CYLINDRICAL PROJECTION
EQUATORIAL SCALE
0
500
1000
Miles
0
500
1000
Kilometres

The above diagrammatic map depicts the region covered by the study. The boundaries shown are not, in some instances, finally determined and their reproduction does not imply official endorsement or acceptance by the United Nations.

1. The geographical, historical and social background

The Meeting of Ministers of Education of Asian Member States of Unesco, held in Tokyo in April 1962 to consider the 'Karachi Plan' for the provision of universal compulsory and free primary education in Asia concluded that 'the Karachi Plan is an essential first stage, but only a first stage, in the development of our countries. It must be extended to cover all levels of education—primary, secondary, higher and adult. . . . Such a comprehensive educational programme needs to be completed by being integrated into the over-all national plan of each country.'[1]

The eighteen countries signatory to the report of this meeting were Iran, Afghanistan, Pakistan, India, Nepal, Ceylon, China, Korea, Japan, Burma, Thailand, Malaysia (Malaya and Singapore), Laos, Cambodia, Viet-Nam,[2] Indonesia and the Philippines.

THE REGIONAL CONCEPT

The present report, though fully briefed on education planning activities in Asia being carried out jointly by Unesco and the Economic Commission for Asia and the Far East (ECAFE), and aligning itself in general with the quantitative positions adopted by the two travelling Unesco Planning Missions in their country studies,[3] is concerned only with a single aspect of the

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[1] *Final Report of Meeting of Ministers of Education of Asian Member States participating in the Karachi Plan*, p. 38 (Bangkok, Unesco/ED/192, 1962).

[2] For convenience the Republic of Viet-Nam is subsequently referred to as Viet-Nam, and the Peoples' Republic of Viet-Nam as North Viet-Nam. Further, recourse has been had to the term 'Indo-China' whenever joint reference to Laos, Cambodia and Viet-Nam is made. It is hoped that this practice will be permitted for its convenience to reader and to author.

[3] See p. 410-12. The designation URAT (Unesco Regional Advisory Team) is applied to distinguish references to the reports of the two missions.

Karachi Plan in its enlarged conception, and that in a limited field. This aspect is the significance of the third level of education in the whole process of social and economic development: the field is limited to South-East Asia —that is to say to the last eight of the signatories of the Tokyo Report, from Burma to the Philippines.

This is no convenient shrinkage of an overwhelming field on the basis of mere geographical contiguity. The term 'South-East Asia', it is true, is no older than the Second World War, when it emerged in the organization called SEAC (South-East Asia Command), but the region has an ancient, and perhaps a more gracious cognomen in the Chinese *Nan Yang* or the Japanese *Nan Yo*—the region of the Southern Seas.

It would be idle to deny that amongst the countries of the region there exist, at the time of writing, a diversity of political ideologies which may at first sight inhibit a regional approach even to scholarship. Furthermore, a number of them are at present contending with an internal instability that results from a variety of socio-economic as well as political factors. The mirror of educational or other types of planning is clouded, the images reflected from time to time shifting in a pattern of expediency rather than of calculation.

However, this report attempts to show that whatever may be the cause, the nature or the extent of these tensions, there is nevertheless an underlying basis throughout the region of similar geographical, ethnological and cultural factors, comparable historical development, common needs and common problems which enable the growth and functions of higher education to be seen as a regional process and asset as well as an element of national development. Consequently the report proceeds on the hypothesis that regional thinking and regional action will only develop as national systems and institutions, which have much to learn from each other, begin to realize their full potentialities. Then the constituent countries will be able not only to make the maximum use of their own expanding institutions, but also to contribute to the development of the region as a whole, and indeed to the global world of teaching and research.

GEOGRAPHICAL FACTORS

It is of course true that bio-geographical factors are the main contributors to the concept of South-East Asia as a region, with a character of its own and problems common to all its constituent countries. Despite the fact that its million and a half square miles (set within four times that area of ocean) are equally divided between the mainland and a chain of island groups (some mere islets, two of them among the largest islands in the world), the two together have formed an extensive marchland between the peoples of India on the west and China on the east and north. The great mountain barriers of the Tibeto-Chinese border have regulated, if not confined, the overspill from the teeming lands of central and eastern Asia. On the other hand the sea lanes through the Straits of Sunda or the Malacca Straits, giving access to the alluvial valleys of the great mainland rivers or the coastal plains of the islands, have made possible culture contacts and racial mixtures from both flanks of the region, whilst the seasonal monsoons permitted sailing vessels entering the region from either west or east to return within the year. There was no one-way traffic within the South China Sea.

The region is dominated by water: the great rivers of Burma, Thailand and Indo-China, the Irrawaddy and the Salween, the Menam and the Mekong, erratic in volume, laden with sediment, together with their systems, flood the rice paddies, build up the rich alluvial plains, spread their deltas, afford, when their vagaries of volume permit, what is often the sole means of transport, house communities, and now offer a vast potential source of power at what, in the case of the Mekong, can only be called the international level.

For centuries the sea has provided a highway between the Indian Ocean and the Pacific—a route to Japan, to China, to the west coast of North America and, for all but the direct lines, an alternative route to Australasia. Almost all major cities of the region—Rangoon, Bangkok, Penang, Singapore, Saigon, Djakarta, Manila—are great ports: of three ships passing through the Suez or Panama canals, one is likely to call in Malaysian ports.

Today another element has been added; the seaports are airports too. Airliners from Europe and North America swoop incessantly down on Don Muang airport at Bangkok, perhaps the major air junction of the East, and the more romantic images of the Arab dhow and Chinese junk have been replaced by the ageless Dakota, still droning along the routes of its more leisurely predecessors.

This pattern of communication is of immense significance. The rugged relief of the interior, the peaks, jungles and malarial swamps are all barriers to communication, and concentrations of population are to be found largely within the river valleys. The situation is complicated again by the unavoidable isolation of the islands within the archipelago chains. Communication between capital and capital, between Bangkok and Singapore or between Saigon and Paris, Kuala Lumpur and London, Manila and New York, Djakarta and The Hague can be much easier than between the capital and its own hinterland. Poor communications encourage political fragmentation.

The antiquity and development of seaborne communication also help to explain the remarkable difference between the sophistication of the major cities with their airports, international hotels, concrete office blocks, universities, hospitals, cinemas and sports arenas, and the stilted wooden huts dotted along palm-fringed beaches or clustered in a patch of bamboos among the paddies.

POPULATION OF THE REGION[1]

The region, in mid-1961, had an estimated population of 205 million[2]—projections indicate that in twenty years' time this will probably have risen to 348 million: fertility is high, the mortality rate is declining, and there is every expectation of a rapidly accelerating growth.

Nearly half the population is to be found in Indonesia (95,655,000).[3] The Philippines (28,727,000), Thailand (27,181,000) and Burma (21,527,000) have populations of mutually comparable size. The Indo-Chinese group numbers approximately the same as these—21,705,000 with Viet-Nam (14,520,000), Cambodia (5,335,000) and Laos (1,850,000). Malaysia numbers 10,044,000, of whom 7,137,000 are in Malaya itself.

There are heavy concentrations of population round the major ports, in the deltas of the Irrawaddy, the Menam and the Mekong, in most of Java and Madura, in central Luzon, and in the Visayan Islands. Low densities are to be found in Laos, Borneo, and large areas of Burma, Cambodia and the Philippines. For the region as a whole, half of the population lives in one-twelfth of the land area; the same distribution is true of two-thirds of the population of Indonesia. One-half of the population of the Philippines is to be found in one-fifth of the land area, and three-fifths of the Vietnamese on one-sixth of their land. The average density is 142 to the square mile—one-third that of India or China, one-sixth that of Japan. It must be remembered, however, that the high average density of Java (1,168 to the square mile) offers a violent and perhaps disquieting contrast to the relative emptiness of vast areas of the region.

The main ethnic groups, excluding primitive Australoid and Negrito and Melanesoid peoples still to be found in the mountains of Malaya, Indonesia and the Philippines, are two Malay types (also referred to as Nesiot or Indonesian and Pareoen or Southern Mongoloid) whose general origin appears to have been south-western China, and who penetrated the region from the north-west and the north, spreading down the river valleys and the peninsula, and so through the islands. The drift has continued, but with a lessening flow, with the result that Mongol characteristics are more observable in the people of the mainland than in the island peoples.

A HISTORICAL SKETCH

The people of the region were, as are their descendants today, cultivators and seafarers. They lived in villages, domesticated animals, and used the artefacts of weavers, of potters and of workers (perhaps with somewhat primitive techniques) in metals. They were animists, worshipped their ancestors, and were members of organized communities when, during the first two centuries A.D., Indian merchants from the west and Chinese trade missions from the east began to infiltrate steadily through the South China Sea from settlement to settlement, along the coast of the mainland, and round the shores of the islands.

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[1] See also p. 41-3.

[2] The population figures which follow are taken from the *United Nations Statistical Year Book, 1962,* Table 1.

[3] Now (mid-1964) over 100 million.

They came seeking sandalwood and camphor, ivory and spices and, for the Chinese palate, birds' nests; they brought silk, pottery and porcelain, and the fruits of their own cultures. In the wake of the traders from the west came, perhaps in the first place to trading stations, perhaps at the request of local chieftains, the Brahmins. These priests, with their great skills as administrators and chroniclers, made possible the rise of the empires, kingdoms and lesser States—based upon the monarchical concepts of both Hinduism and of Mahayana Buddhism, before its replacement by Theravada (Hinayana—the 'Lesser Vehicle'), which sprang up, flourished and perished during the next fifteen hundred years. The stage was set, too, for the establishment of the meticulously planned State capitals such as Angkor and Pagan which, organized in the midst of jungle, established the gulf between court and rural life which, in its modern version, offers one of the greatest obstacles to educational development today.

China exported its products, its languages, its philosophy and its sciences, but not its religions. Its influence was primarily economic: Chinese political ambitions apparently extended no further than Annam (Viet-Nam), and where Chinese suzerainty was claimed or acknowledged, this was little more than a formal ritual required before trade relations could be established.

Both cultures contributed to agricultural development—the Indians with tank-storage systems of irrigation, the Chinese with water control, dyke building and the use of fertilizer.[1]

The last stage in this pattern of oriental acculturation was the advent of Islam into the archipelago, brought not principally by Arabs, but rather by Moslem merchants from India. The new religion, with a popular rather than an aristocratic appeal, spread rapidly, and with it came a lessening of the significance of the court and the capital, and a reversion to the unity of the village community which is still so largely the core of the region's life.

Islam replaced Buddhism and Hindu deities in the archipelago, and it was the Islamic stronghold of Malacca, on the Malayan mainland at the gate of the straits leading to the South China Sea, that first felt the impact of the Portuguese merchant venturers of Western Europe. This happened in 1511. One hundred and thirty years later the Dutch ousted the Portuguese, who still retain, however, a half share of the small island of Timor.

Malacca fell in turn to the British during the Napoleonic Wars, and the

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[1] The success of Chinese methods may be seen today in the contrast between the undisciplined gardens of the Thai-Lao villages of north-east Thailand and the intensive horticulture of the Annamese who have sought political refuge there.

British East India Company, with factories also at Penang and Singapore, began the long process of establishing the Straits Settlements and the Federated or Protected Malay States. In the final negotiations the Spice Islands and the production of export crops were left to the Dutch, though Sarawak and Brunei, and later North Borneo remained under British influence. Burma became in name a colony of England, in practice a dependency of the Government of India; Indo-China fell to the French; the Philippines to Spain; and only Thailand, at some expense of territory, and with great diplomatic agility, remained independent, a buffer kingdom between British and French spheres in Burma and Indo-China.

The tide began to turn with the great libertarian movements of the twentieth century—the emergence of a nationalist movement in India, the overthrow of the Manchu dynasty in China, and the unexpected success of Japan in the Russo-Japanese War. The Philippines, it is true, had achieved independence from Spain before the end of the nineteenth century only to find that bonds, however silken, still harnessed them to the United States. These were not fully shed until 1946. However, the principle of 'self-determination' enunciated at Versailles in 1919 found willing auditors in the nationalist parties now to be found throughout the region. By 1941 only Indo-China, still under French colonial administration, and Malaya, prosperous and fragmented under the British, with a delicate balance of multiracial interests, were stragglers in the march to freedom.

The Japanese concept of the 'Greater East Asia Co-Prosperity Sphere' was premature. It was put forward as an aftermath of invasion, the psychological climate was unfavourable, and the motives of the begetters of the concept scarcely impartial. As it was, the idea of national freedom received a tremendous impetus—the machinery of resistance was immensely strengthened, and when the war ended it was not a question of whether the countries of the region would gain their independence, but when. The question was resolved in some cases by negotiation, in others only after a painful struggle. But however smoothly or hardly won, independence came—to the Philippines in 1946; to Burma in 1947; to Indonesia, after a bitter struggle in 1949 following the initial declaration of independence in 1945; and to Laos, Cambodia and Viet-Nam, again after an exhausting series of campaigns, by the Geneva Agreements of 1954. In 1957 the Federation of Malaya became independent, and finally in 1963 came the Federation of Malaysia, embracing Malaya, Sabah (North Borneo) and Sarawak, and, for a brief period, Singapore. Brunei remains a sultanate.

The nations of the region were free. The struggle for independence had been won. The struggle for development, political, economic and social, had begun.

The circumstances, geographical and historical, which have been thus outlined have of their very nature engendered two opposing trends throughout the region as a whole, and within each individual country.

On the one hand is the tendency to sectionalism: the fissiparous effect of terrain—valleys divided by mountain ridges or scattered island groups—and the separatist factor of multiracial communities with their concomitant separatist elements of religion and language.

On the other hand is the cohesive tendency promoted by the parallel experiences of a common economic background—every country is a primary producer in search of the industrial development which will lead to economic take-off; an equally common political background is supplied by a historical revolution and a process of social evolution. First, the grouping of small kingdoms and sultanates within empires stimulated initially by the brahmins was followed after a recession into village groupings, by the loosely welded system of empires established by the colonial powers. Finally came the transformation, through the concepts of independence and national identity, into eager and emergent nations claiming and receiving their legitimate place in the world comity of nations.

ETHNIC GROUPS

The significance of plural or multiracial societies in relation to educational provision cannot be ignored. There are few areas in which questions of the vernacular, the language of instruction, the bridge language and languages of wider communication, the provision of texts and translations and the training in language instruction techniques of teachers, do not complicate an already heavily burdened system. In the religious context the educational activities of religious bodies may be seen in a variety of activities ranging from a major asset in the provision of school accommodation to an embarrassing and uncompromising alternative to State schools.

In such situations it may be helpful to regard higher education as a catalyst capable of bringing about the integration of the potential higher cadres of plural societies into a truly national élite. The image is, however, less appropriate when it is clear that the catalytic agent itself must necessarily undergo major changes as its primary function becomes more and more effective.

Certainly it is necessary, in any examination of educational provision at any level, to take account of those differences of race, creed or tongue which find their reflection either in an elaboration of the organization of the educational system or in minority views which, it is incessantly claimed, do not find adequate expression in the provision of educational facilities.

Two aspects of the racial question have to be considered, the presence of considerable ethnic Chinese and Indian communities, largely on the mainland; and racial, religious or political separatist elements within particular countries. No country within the region is free from such problems.

Table 1 (which includes North Viet-Nam), indicates the growth of Chinese communities between 1931 and 1962.

TABLE 1. Distribution of Chinese in South-East Asia[1]

Country	1931		1962	
	Total number Chinese	Percentage of population	Total number Chinese	Percentage of population
Singapore	418 000	75.0	1 303 000	75.2
Malaya	1 285 000	34.2	2 715 000	36.9
Sarawak	100 000	20.0	243 000	31.0
Brunei	2 700	9.0	23 000	26.0
North Borneo	50 300	18.0	110 000	23.0
Thailand[2]	1 450 000	12.2	3 400 000	13.0
Viet-Nam:				
South[3]	215 000	2.5	850 000	5.8
North[3]	52 000	0.7	40 000	0.3
Cambodia[4]	148 000	5.5	425 000	7.5
Laos	3 000	0.2	38 000	2.0
Indonesia[5]	1 250 000	2.0	2 520 000	2.5
Burma[5]	194 000	1.3	400 000	1.8
Philippines[3]	80 000	0.6	400 000	1.3
TOTALS	5 238 000	4.3	12 467 000	5.1

1. D. P. Murray, 'Chinese education in South-East Asia', *The China Quarterly*, No. 20, Oct.-Nov. 1964. This article contains a very full and authoritative survey of the position, with a review of the position in each country of the region.
2. Estimate of ethnic Chinese, including 2 per cent of Chinese nationals. In the original table a lower estimate (2.5 million) has been quoted from source 5.
3. 1931 figures refer to Tonkin and Annam-Cochin China, respectively; as elsewhere in Indo-China and in Burma for that year, they refer to those *legally* rather than *socially* Chinese.
4. 1962 estimates provided by Mr. William Willmott, London School of Economics, in private correspondence.
5. 1962 estimates provided by Dr. G. William Skinner, of Cornell University, in private correspondence.

Chinese communities now account for some 7 per cent of the total population of the region, Indian and Pakistani communities for another 1 per cent. The proportion is not large, but the distribution, particularly in the case of the Chinese, is of major significance.

The most overwhelming concentration is in Singapore, where 1,366,500 Chinese form over 75 per cent of the total population, and where, as in Hong Kong, a Chinese language university, Nanyang, has arisen to supplement an anglophone institution at which admission difficulties arose in the case of students coming from Chinese secondary schools where the language of instruction was Mandarin.

This, of course, is only an intensification of the general position in Malaysia, where the Chinese element presents a formidable problem in the task of political integration, since Chinese are present not only in great strength in the towns, but also in a wide scatter throughout the countryside, as tin miners, agriculturists and small traders. Indeed in 1964, of a total population in the territories then forming the Federation of Malaysia—Malaya, Singapore, Sarawak and Sabah (North Borneo)—of 10.96 million, 4,610,000 were Chinese, 4,355,000 Malays (including Indonesians and Filipinos), 751,000 were peoples indigenous to Borneo and 1,239,000 included Indians, Europeans, and other peoples. The strength of the Chinese would of course be even more heavily emphasized if the calculation were based, not upon numbers, but upon capital investment in the country or the respective figures of *per capita* income. The present compromise whereby the commercial and industrial drive of the Chinese is offset against the political power and prerogatives of the Malays, their ownership of land and their adherence to the State religion of Islam, is scarcely one to commend itself as a preparation for a united drive for social and economic development. It may be considered that in these circumstances the contribution of a common language (though the difficulties of the inevitable choice of Malay must not be under-estimated), a common school, and above all of a common university, could be decisive.

In Thailand the Chinese form about 13 per cent of the total population though only 2 per cent are Chinese nationals. More than half of this community is to be found in the south of the central Thai plain, and the Chinese form a highly significant element in the population of Bangkok, where the commercial life of the city is largely in their hands.

The presence of 2.5 million Chinese in Indonesia has, through their commercial power and their large proportion of high-level manpower, exerted an influence far beyond that which might be expected from a minority of little over 2.5 per cent. Nevertheless, in comparison with the situation in Malaysia, the Chinese are more widely dispersed and their impact on national policies is more indirect. Thus, for instance, while there is no Chinese language institution of higher education in Indonesia, there is, among other national student bodies, a national union of Chinese students.

The Indian population of the region, roughly one-sixth the size of the Chinese element, is located largely in Malaya (11 per cent of the population) and Singapore (8 per cent): recent events have certainly lowered the earlier significant 4 per cent of the population of Burma.

Burma, however, remains a Union which uneasily embraces substantial and clamant Shan and Karen minorities. The peoples of the outer islands of Indonesia—Sumatra, the Celebes, the Moluccas and the Lesser Sunda Islands—are more than restless at the centralization of authority in Java. There are minority groups on the southern (Malay), north-western (Burmese) and north-eastern (Laos) borders of Thailand. Viet-Nam remains for the moment, like Korea, bisected by an artificial frontier, and consequently has a divided people.

RELIGION

Ethnical migrations, followed by merchant adventurers, and, later, colonists from the West, were accompanied and succeeded by changing religious influences and patterns. Some Hindu influence may still be traced, but in general only Buddhism survived the advent of Islam. Malaya and Indonesia are today Moslem countries—only Bali retains a curious mixture of Hinduism and Buddhism. Burma, Thailand, Viet-Nam and Cambodia are principally Buddhist, mainly following the Theravada forms of Buddhism. The Philippines, which Islam barely penetrated before the arrival of the Spaniards, is today 95 per cent Christian, and very largely Catholic. There is a strong Catholic element in Viet-Nam strengthened by a vast migration (800,000) from North Viet-Nam following upon the Geneva Agreements. The Karens form a significant Protestant minority in Burma. There are also some two million Christians scattered throughout the islands of Indonesia—little more than 2 per cent of the total population—who are not politically significant as a community. The hill tribes of central Malaya and Borneo, of the Burma-Thai border and the lower Mekong valley remain animists, and the influence of the old Annamite Empire remains to a certain extent in Viet-Nam, where a Chinese form of Buddhism not unaffected by Confucianism either survives or has been transformed into a local cult.

Within this diversity and beyond the urban areas, despite the colouring of religion given to unfortunate antagonisms between Karens and Burmese, or Catholics and Buddhists in Viet-Nam, there is a certain degree of uniformity in ritualistic practices and superstitions, as well as a general atmosphere of mutual tolerance.

The influence of Islam has been largely directed to religious rather than to secular studies at the highest level. In the Buddhist countries, Thailand owes the foundation of its rural school system to the village *wats*, though these schools have now been secularized; the present Burmese Government is still clearly relying to a great extent on Buddhist and on Christian mission schools.[1] It is in the Christian territories, chiefly of course in the Philippines, but also in the Karen territories of Burma and in Christian missionary institutions everywhere, that the connexion between religion and education in either its proselytizing or established forms, has been most actively evident.

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[1] Now (mid-1965) it is understood, closely controlled by the State.

LANGUAGE

From the educationist's point of view, however, it is in language that the racial diversity of the region reveals itself most clearly. It is language which has been seized upon as a basic factor in the establishment of a national identity, and it is in language problems that the education systems of the various countries have at the same time both a major task of teaching to accomplish, and in most cases, some major obstacles to surmount.

The problems of language, particularly in relation to higher education, are of major importance and cannot be adequately treated in the brief compass of an introductory chapter. A summary of the detailed report of the study's consultant is therefore included in this report in Chapter 7, which follows a study of the relation between social development and higher education.

THE GENERAL PICTURE

The political situation, internal and external, lies beyond the scope of this report. It is, however, necessary to point out that, in the case of many of the countries of the region today, so unsettled is their future, so preoccupied are they with internal struggles for political stability that the projection of manpower needs over a twenty-year period, the possibility of the attraction of capital, the growth of industrialization and the whole process of planning tend to leave the realms of prognostication and enter those of pure poetry.

Nevertheless, however clouded the vision of the future may be, there is not one of these countries which is not actively engaged, whatever its other preoccupations, in educational development, in full consciousness of the importance of profiting from its untapped assets of human resources.

The general picture remaining as these centres of ancient culture and newly won nationhood[1] strive to establish themselves is that of a group of countries spread over a vast and difficult terrain populated in the main by peasant cultivators of amiable but by no means dynamic disposition led, in some cases somewhat insecurely, by small cadres of intellectuals grouped in metropolitan cities the life of which, at least on the surface, bears little resemblance to the circumstances or the needs of the vast population of the hinterland.[1] The catalyst which for the moment has succeeded in fusing these disparate groups is the concept of national identity, emerging from the struggle for independence.

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[1] In these and similar generalizations relating to independence, Thailand—though a sovereign state for more than seven hundred years—is not necessarily to be considered apart from the general situation. Her own development has been domestic—her freedom is derived from the peaceful change from absolute to constitutional monarchy, and the recent series of *coups d'état* achieved with almost academic finesse have been in striking contrast to the turbulence of political adjustment in some other countries of the region. Nevertheless, Thailand still shares almost all the economic and many of the social and cultural problems with which this report deals. She remains, for example, in the first stage of development in which the productivity of a basic crop (rice) is stepped up for external marketing. The next stage, of investment of the profits in industrial expansion, is only in its initial phase.

The role that higher education can, in these circumstances, play in mobilizing for the development of the natural resources of the countries of South-East Asia the great potential of mind, character and ability to be found in their human resources, is the main theme of this report.

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[1] The matter so briefly condensed in this introduction is treated at length in the following works, to which grateful acknowledgement is made:
C. A. Buss, *South-East Asia and the World Today*, Princeton, New Jersey, 1958.
B. Harrison, *South-East Asia—a Short History*, London, Macmillan, 1960.
E. H. G. Dobby, *South-East Asia*, 7th edition, London, University of London Press, 1960.
C. A. Fisher, *South-East Asia*, London, Methuen, 1964.
C. D. Cowan, *The Economic Development of South-East Asia*, London, Allen and Unwin, 1964.
G. Cœdès, *Les Etats Hindouisés d'Indochine et d'Indonésie*, Paris, De Boccard, 1948.
Lê Thành Khôi, *L'Economie de l'Asie du Sud-Est*, Paris, Presses Universitaires de France, 1958.

2. Patterns of education within the region

PREAMBLE

In this complex of racial, religious and linguistic diversity there emerges, as the greatest single common goal for nations throughout the region, the quantitative development of their education systems—quantitative at all levels, but a development still based primarily upon numbers with less regard for excellence.

The situation is a familiar one in almost all developing countries. The close of the colonialist era saw a rapidly expanding primary school system, often based upon voluntary schools supported by government grants-in-aid, and a secondary system still inadequate to cope with the increasing numbers of pupils leaving primary schools and wishing to continue with their education, but which in the decade 1930-40 had made rapid advance both in the size of provision and the quality of instruction. The secondary system was, however, still catering for centres of urban population rather than drawing upon the full reticulation of the primary system, and the loss of potential ability was great.

The system was, however, supported at its apex by a small but steady flow of students proceeding to higher education in the metropolitan country, a process particularly to be remarked in Indo-China, where although Hanoi was the only university, the Sorbonne, and to a lesser extent the French provincial universities, were available as the normal conclusion of education at the third level. The process of overseas education before the Second World War is illustrated—though for a territory where educational services were not well developed—by the figures for Indonesian and Chinese matriculants at institutions of higher learning in Indonesia and at universities in Holland set out in Table 2.

TABLE 2. Indigenous students matriculating in Indonesian and Dutch universities, 1924 . . . 1939[1]

Year	Indonesia			Netherlands		
	Indonesian	Chinese	Total	Indonesian	Chinese	Total
1924/25	26	10	36	8	9	17
1929/30	91	24	115	20	25	45
1934/35	112	75	187	17	19	36
1938/39	128	82	210	24	28	52
TOTAL	357	191	548	69	81	150

[1] Compiled from S. L. Van der Wal, *Some Information on Education in Indonesia up to 1942*, p. 11 and 13 (The Hague, Netherlands Universities Foundation for International Co-operation, 1960).

This table exhausts the information which is comparable. It is interesting to note, however, in view of the subsequent remarkable expansion of higher education in Indonesia, that the total number of *graduates* from institutions of higher learning in Indonesia for the seven years from 1933 to 1940 was only 394, of whom 189 were Indonesian, 96 Chinese and 109 European. The number of Indonesian and Chinese *matriculants* in Dutch universities during the sixteen years from 1924 to 1940 was 650 (308 Indonesian and 342 Chinese).

The total educational situation, as familiar in Africa as in Asia, offered a not altogether unpromising base for the expansion which has everywhere accompanied independence. In the first place, although the original systems were closely patterned upon metropolitan models with little relation to the immediate environment, they were at least based upon considerable administrative experience and related to a wide body of educational thought. In other words the systems were capable of expansion and adaptation without the necessity of having to rebuild the whole structure.

But the systems did not reach far enough, and primary schooling generally stopped short at four years—a situation which, after all, existed in free Thailand until a few years ago. Teachers were poorly trained, as a result of which they tended to become even more conservative in their professional methods and attitudes than their Western colleagues. They were, and still are, inadequately paid. The curriculum was adjusted neither to the environment of the pupils nor to the natural rhythm of their reaction to the learning process, and at the secondary level was dominated either by the entrance requirements of a university itself too closely patterned to a metropolitan concept, or to a final examination in most cases conducted by a metropolitan authority.[1]

On occasion the vernacular of many pupils was either forbidden as a teaching medium, or dropped as such after perhaps four years of schooling. Textbooks were scarce, expensive and inappropriate, and whilst metropolitan publishers had awoken to the immense market that waited to be opened up by texts prepared to meet the needs of a particular country, their entry was cautiously made through the adaptation, seldom adequate, of texts which had been successful on the home market, re-worked by retired colonial educators. This situation, which will be encountered more than once in this report, is by no means easy of solution. The unavoidable commercial problems of publishing on a large scale are by no means simple, and Unesco has found a most fruitful field in its attempts to tackle the problem by the establishment of plant, as in South Korea; by textbook bureaux, as in Ghana or Cameroon; by seminars, meetings and workshops; and the setting up of a publishers' committee. The field of scientific and prestige publishing which is vital to university work has its special problems of more limited circulation and more expensive production. The Scientific Documentation Centre such as that recently established with the assistance of Unesco on the outskirts of Bangkok is one, but only a partial, solution to this aspect of the problem, which is taken up later in this report.

Vocational education, until after the Second World War, was largely confined to simple trade instruction in carpentry, building and fitting, or, in the field of agriculture, to premature farm schools; middle-level technicians were trained on an *ad hoc* basis by the government department concerned—public works, the railways, telecommunications. The major aim of the majority of secondary-school pupils was employment by the government as clerk or teacher; the incentives or the opportunities for setting sights higher were slight. The administration of education was almost entirely in expatriate hands. Inspection was, however, slowly coming within the range of the promoted indigenous teacher.

Among the assets of the position were the attempts, after a strenuous selective process by wastage, attrition and examination, to maintain high standards at the upper secondary level, the high teaching standards of the few universities (research had not yet, and has not yet, taken its rightful place), the skill and devotion of many expatriate education staff, and the growing emergence of an *élite* who were to become in many countries the leaders of independence movements and of the new nations.

Moreover, save in the case of Indonesia, the ground was prepared for the

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[1] The principle remains, despite the efforts of examining bodies such as the Cambridge Local Examinations Syndicate to adapt syllabuses to, for example, Malaysian needs. Such attempts, and the freedom to propose new syllabuses, were often frustrated by the conservatism or inertia of local teachers rather than by the obduracy of the examining body.

TABLE 3. Date of establishment of South-East Asian universities

Country	Pre-1940	1940 to independence	Post-independence
Burma	University of Rangoon, 1920.[1]	University College, Mandalay, 1947.	Independence 1948. University of Mandalay, 1958.[2]
Cambodia	University of Indo-China[3] at Hanoi, 1917.		Independence 1954. Buddhist University, 1955. Royal Khmer University, 1960.
Laos			—
Viet-Nam			University of Saigon,[3] 1954. University of Hué, 1957. University of Dalat, 1958.
Malaysia			
Singapore	One medical school, 1905.[4] One university college, 1928.[4]	University of Malaya (Singapore), 1949.[4, 5] Nanyang Chinese University, 1956.	Independence 1959.[5]
Malaya			Independence 1957.[5] University of Malaya (Kuala Lumpur), 1959.
Sabah	—	—	—
Sarawak	—	—	—
Indonesia	Four single-faculty institutions of higher learning: Technology (Bandung), 1920; Law, 1924; Medicine, 1927; Administration, 1938.	University of Djakarta planned on basis of faculties of Arts, Philosophy, Agriculture, and Veterinary Science, 1940/41—closed 1942.	Independence 1949/50. Gadjah Mada University, 1949. University of Indonesia, 1950.[6] Institute of Technology, Bandung, 1959. 25 other State universities. 179 private universities.[7]

1. With three affiliated Intermediate Colleges.
2. With two affiliated Intermediate Colleges.
3. Transferred to Saigon, 1954.
4. The University of Malaya (Singapore) was founded in 1949 by the amalgamation of Raffles College and Edward VII School of Medicine.
5. In 1959 a second division of the university was established at Kuala Lumpur. The two divisions were completely separated in 1961. It will be noted that 1959 rather than 1963 has been given as the date of Singapore's independence since complete autonomy in internal affairs was granted at the earlier date.
6. Originally with branches in Djakarta, Bogor, Bandung, Surabaja and Makassar, being an amalgamation of Dutch and Indonesian institutions of higher learning.
7. Of these, at the beginning of 1964, 87 had been recognized by the government, the credentials of the remainder being under examination.

Country	Pre-1940	1940 to independence	Post-independence
Philippines			Independence 1946.
	State universities University of the Philippines, 1908.		*State universities* University of Mindanao, 1962.
	Chartered institutes[8] Mindanao Agricultural College, 1928.		*Chartered institutes* 6 established between 1950 and 1959.
	Private universities[9] (i) *Religious foundations* University of Santo Tomas, 1619 : 1645. Silliman University, 1938.		*Private universities* (i) *Religious foundations* Santo Carlos University, 1948. Ateneo de Manila University, 1959. University of San Augustin, 1953. Central Philippines University, 1953.
	(ii) *Privately managed universities* National University, Manila, 1921. University of Manila, 1921. Philippine Women's University, 1932. Far Eastern University, 1934.		(ii) *Privately managed universities* University of the East, 1950. Araneta University, 1958. Feati University, 1959. (There were in 1963 a total of 24 private universities and 342 degree-granting colleges.)
		Post-1940	
Thailand	University of Medical Sciences, 1883.[10] Chulalongkorn University, 1917. Thamassat University, 1933.	Kasetsart University, 1943. Silpakorn (Fine Arts) University, 1943. College of Education, 1954. Chiengmai University, 1964. North-Eastern University, Khonkaen, 1964.	

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8. The table does not include 41 regional schools of higher professional and technical training under the control of the Bureau of Public Schools.
9. About one in a hundred of the population of the Philippines is enrolled in higher education: the table illustrates by reference to a few of the better known of the 24 private universities and 342 degree-granting colleges the earlier start made by the Philippines in the field of higher education. Many of these institutions started as schools or colleges—the Ateneo de Manila in 1859, the University of San Augustin in 1904 and the Central Philippine University in 1905. The date of foundation refers to their attainment of full university status.
10. The University of Medical Sciences was incorporated in Chulalongkorn University, but re-established as an independent university in 1948.

expansion to come, and existing systems, themselves growing fast, were available to support the first stages of growth and thus allow a breathing space for remodelling where this was determined upon, without planning being frustrated by the pressure of absolute urgency.

Undoubtedly the weakest element in the situation at the outbreak of the Second World War was the extent and balance of the provision, and not so much the quality, of university education. The position is illustrated in Table 3, which shows the number of universities in the region, (a) before the Second World War, (b) between 1940 and the attainment of independence, and (c) subsequent to independence.

Until the war, apart from Thailand, where in addition to the two universities in Bangkok there was a strong tradition of a European university education for the sons of the aristocratic families—and in the Philippines, where original Catholic effort had been reinforced by American missionary and commercial developments in the field of higher education—there was one university in Burma, one for the whole of Indo-China, two institutions which had not reached university status in Singapore, and four similar institutions for Indonesia.

If the general pattern of education in the region was based upon metropolitan practices, the same held even more closely for the universities and colleges. They were established by civil servants who knew little of universities other than what they had experienced many years ago during their three or four years as undergraduates, or learnt through commissions engaged upon problems of transplantation rather than innovation, and preoccupied with equivalence and standards rather than the needs of the country for which they were planning, and of which they might have little knowledge and less experience.

Thus the region can show the British provincial model, small and residential, as was the case in the University of Malaya at Kuala Lumpur; the French model at Saigon, with high entrance standards and an academic approach to teaching which has been gradually modified since independence; and a similar duality between the original Dutch model at Djakarta with its concept of free study and the 'guided study' programme now adopted in most faculties under the influence of American professors. Finally, in the Philippines can be found every variant of the complex American pattern from a land-grant college type to a great Jesuit university.

The situation has, of course, been further complicated by the employment of expatriate staff coming from the near prototype in the metropolitan country, genuinely convinced that, with a modification here and there, the answer to the problem lies within their own experience, an attitude in which they are likely to be more than strongly supported by those of their indigenous colleagues who were graduates of Oxford, Birmingham, the Sorbonne, or Teachers' College, Columbia University.

Compromise is possibly a solution more favoured by politicians than academics: certainly the advent on the hitherto European-dominated scene of contract teams from the great American universities[1] has resulted in the importation of yet another Western pattern of higher education fully developed before its introduction into the region.

The problems created both by the initial situation and attempts to make radical alterations, which may themselves not be acceptable after a short while, will need close consideration.

This preamble introduces a short outline of the main features of the present educational situation in the region. The approach is generalized, so far as is possible, since more detailed information on the systems of individual countries is given in Volume II of this report.

A comprehensive comparative treatment of the various systems will be found in the appropriate volumes of Unesco's *World Survey of Education*. Volume I deals with organization, Volumes II and III with primary and secondary education, and Volume IV with higher education. The survey is, of course, global, and the information detailed, but it suffers from the inevitable disadvantage that its statistics, particularly those in the earlier volumes, are by now out of date. Even the descriptive sections have not everywhere been able to keep in line with recent, and sometimes major, developments.

I. Primary and secondary education

SOME DEMOGRAPHIC ASPECTS

The population of South-East Asia is increasing at a very high rate, only exceeded by South and Central America, the average annual increase being about 3 per cent. The total population is expected to double in the thirty-year period 1950 to 1980, when it will account for more than 7 per cent of

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1. The 'university contract' form of aid, whether effected through one of the great American foundations, through a foreign aid programme, or directly between institutions, has played a considerable role in the remarkable expansion of Indonesian universities. Such contracts have included: (a) Cornell University-University of Indonesia (social and economic research); (b) University of California (Berkeley)-University of Indonesia (economics and medicine); (c) University of Kentucky-Bandung Institute of Technology (engineering); (d) University of California (Los Angeles)-Gadjah Mada University (engineering); (e) University of Wisconsin-Gadjah Mada University (economics); (f) University of Kentucky-University of Indonesia (Bogor) (agriculture); (g) Johns Hopkins School of Advanced International Studies-Gadjah Mada University (political science); (h) New York State University-various teacher-training faculties; (i) University of California (Berkeley)-Airlangga University (medicine). These contracts were subsequent to the visit of a five-man mission the members of which derived from UCLA, Johns Hopkins, Princeton, Texas A and M College and the United States Office of Education.

the world's population: thus a regional population of between 300 and 400 million must be expected by 1980.

One of the most striking aspects of the demographic situation is its 'pocket' distribution. Some areas are among the most densely populated in the world and others are only sparsely populated: one-half of the total population lives on one-twelfth of the land surface—one-third of the land is occupied by only a small fraction of the total population.

The percentage of urban population in economically advanced countries is about 30-40 per cent, but only some 13 per cent of the population of Asia as a whole lives in cities of over 100,000. However, this urban ratio has been increasing and over the past thirty years the urban population in South-East Asia has more than doubled its percentage from about 5 per cent of the total population to well over 10 per cent.

Something like half of this urban population lives in a primate city exhibiting certain common features: a higher rate of unemployment, a lower ratio of dependency, a concentration of high-level manpower and a great deal if not all of the opportunities for higher education.

A further feature of the demographic situation of major importance to education is the age structure: the population is 'young', with the percentage of those aged 14 and under ranging from 40 to 47 per cent, and centring around 43 per cent. Approximate figures are Burma 40 per cent, Malaya 44 per cent, Thailand 43 per cent, the Philippines 47 per cent: corresponding percentages for the United States of America, the United Kingdom, and Japan are 27, 24 and 35. The ratio for the school-age (5-14) group is 25.9,[1] comparable with those of Tropical Africa, South America, and Central America and Mexico. The average figure for North America is 16.25.

This high ratio of children of school age in relation to total population is likely to continue over the next generation. Little decrease in the over-all birth rate can be expected without special measures: on the other hand, the percentage of older population will increase with an increase in life expectancy. Thus the numbers dependent on the working population are likely to remain high, and even to increase as children stay on longer at school.

Dependence ratios are much higher in the rural than in the urban areas, as are the proportions of the labour force aged 10+ (especially males) who are economically active. Seventy-five per cent of the male population aged 10+ in the economically active category appears to be fairly typical of the rural sectors of the South-East Asian region.

The combination of these features of predominantly rural 'young' populations, high dependence ratios and high rates of population increase means that each productive worker has a heavier family burden than his counterpart in developed societies, as well as fewer resources to meet the demands upon him. The magnitude of the increase of educational provision to meet the needs of a young population and a developing nation is treated in more detail in the country profiles of Volume II. Here it may be pointed out that in the next two decades, school-age populations are expected to double. Since an average of only about 79 per cent of the primary age group and 13 per cent of the secondary age group are in school,[1] to fill the primary gap alone would require a 27 per cent increase in available places, so that if the aim were to get all the primary school-age group into school within the next two decades, by which time their number would have doubled, the present available places would have to be nearly trebled. The burden of meeting such requirements in South-East Asia falls on about one-quarter to one-third of the population; even so, further demands will be made on these productive workers and taxpayers to provide for the aged who, with declining mortality rates, are forming an increasingly larger proportion of the population.

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[1] *Education in Asia*, p. 5 (Tokyo, Ministry of Education, 1964).

The trend toward greater urban concentration will undoubtedly also continue, and urban educational facilities will accentuate this concentration unless policies are adopted and plans established to avoid a dangerous over-concentration in one city and to develop urban-industrial-educational complexes outside the primate city.

QUANTITATIVE ASPECTS

The patterns of primary and secondary education vary greatly within the region (Fig. 1). Primary courses range from four years (Burma) to seven

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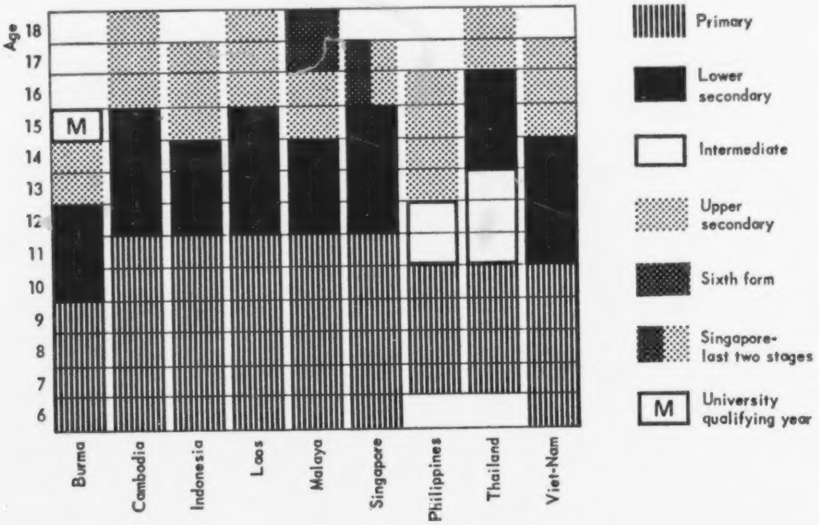
[1] See below, 'Enrolments', and Tables 4 and 5.

FIG. 1. School systems of South-East Asia



(Thailand) and secondary courses also have the same range from four years (Burma) to seven (Indo-China and Malaya): most of the countries have a six-year primary course and a total range of nine to thirteen years for the combined levels. In the Philippines a six-year primary course is followed by a secondary course of four years, which shows two distinct stages in its curriculum planning. The other countries have, or are in the process of implementing, two-cycle secondary courses of varying patterns: 3-3, 4-2, or 3-2 and, in the case of Viet-Nam, Cambodia and Laos 4-3. In some countries, particularly in Burma and Malaya, and before re-organization, in Thailand, the second cycle includes an additional preparatory course of one or two years to be completed before admission to the university.

Enrolments

Primary enrolment in the region in early 1960 accounted for an average of 79 per cent of the relevant school-age population; secondary enrolment[1] for just over 13 per cent of the relevant age groups (Tables 4 and 5). Within these averages there was a considerable range, from 33.0 to 91.5 in the primary ratio and from 2.0 to 27.4 in the secondary ratio. Malaysia and the Philippines had the highest secondary enrolment ratios in relation to secondary-age population: 22 and 27 per cent respectively. Indonesia, Burma, Thailand and Viet-Nam and Cambodia ranged between 7 and 13 per cent and Laos had just 2 per cent of the population of secondary age in school.

The pattern of growth of primary education in the region shows a steady rise from 1950 with a sharp increase after 1953-54 and a levelling off from 1961-62. The cumulative annual rate of growth of primary education between 1950-51 and 1961-62 was about 4 per cent, though averages for 1955-60 show wide variations of between 3.7 per cent (Philippines) to 15.5 per cent (Viet-Nam).[2]

Secondary enrolment has been growing throughout the region at a higher rate than primary, particularly in the period 1956-57 to 1961-62 when the cumulative annual rate of growth for the region was 7.5 per cent. But again in 1955-60 averages showed a variation of 4.9 per cent (Burma) to 14.3 per cent (Thailand).

The rate of growth of female enrolment is increasing everywhere at a more rapid pace than that of male enrolment, but the female proportion of total enrolment at the primary level for the region is about 39 per cent and at the secondary level 35 per cent—the range in the first case being 31 per cent

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[1] All types of secondary education.

[2] (a) The comparable data in this section unless otherwise indicated, are drawn from *Educational Situation in Asia—Past Trends and Present Status:* jointly prepared by Unesco and the Ministry of Information, Japan, for the Meeting of Ministers of Education and Ministers Responsible for Economic Planning of Member States in Africa, p. 55, Table 2 (Bangkok, Unesco, 1965, EDECAS/7, mimeo).
(b) Reference may also be made to Table 41 on p. 202 compiled from different sources.

TABLE 4. Primary enrolment-population ratios for various years, 1960/64[1]

Country	Year	School-age population		Numbers enrolled (in thousands)	Per cent
		Age group	Numbers (in thousands)		
Burma[2]	1960/61	6-9	2 294	1 615.0	70.4
Cambodia	1962	6-11	1 019	624.3	61.2
Indonesia	1961/62	6-11	16 003	12 146.8	75.9
Laos	1963	6-11	406	135.4	33.4
Malaysia[3]					
Malaya	1962	6-11	1 389	1 138.7	82.0
Philippines[4]	1960/61	(7-10)	(3 170)	(3 304.7)	(104.2)
		7-12	4 582	4 192.6	91.5
Thailand[5]	1960/61	(7-10)	(2 975)	(3 715.0)	(125.0)
		7-13	4 858	4 091.0	84.2
Viet-Nam	1963/64	6-10	2 151	1 574.7	73.2
TOTAL			32 702	25 518.5	79.0

1. With the exception of Burma, all data are taken from the reports of the Unesco Regional Advisory Teams for Educational Planning in Asia, in order to assure comparability with the 'Asian Model' prepared by the Bangkok Office of Unesco on the basis of these statistics for the Conference of Ministers of Education and Ministers responsible for Economic Planning of Member States in Asia (22-29 November 1965). Discrepancies that may be found on comparison with other available data from national sources are apparently, as usual, due to differences of definition and estimates of relevant population groups.
2. Statistics for Burma are taken from (a) *Economic Survey of Burma, 1964* (Ministry of National Planning), and (b) data submitted to Unesco by the Planning Branch, Ministry of Education, Burma.
3. Comparable data are not available for Singapore, Sabah and Sarawak.
4. The second set of figures combines primary and intermediate stages, but excludes about 7,000 pupils in vocational courses at the intermediate level.
5. The first set of figures refers to the first four years, subsequently extended to cover seven years of primary education. The second set are compiled on this basis.

(Cambodia) to 48 per cent (Philippines) and the second 17 per cent (Cambodia) to 47 per cent (Philippines). The latter percentage is probably overweighted on the female side, since very high female ratios are found in Singapore, the Philippines and Thailand. Where wastage studies have been undertaken, it is evident that the drop-out rate for girls in primary schools has been nearly twice that of boys: it seems, however, that once parents send their daughters to secondary schools they are just as anxious to keep them there as they are to keep their sons.

TABLE 5. Secondary enrolment-population ratios for various years, 1960/64[1]

Country	Year	School-age population		Numbers enrolled (in thousands)		Per cent	
		Age group	Numbers (in thousands)	General	Vocational[2]	General	Total general and vocational
Burma	1960/61	10-15	2 895	325.9	3.67	11.2	11.4
Cambodia	1962	12-18	877	61.0	3.71	7.0	7.4
Indonesia	1961/62	12-17	8 871	659.5	280.30	7.5	10.6
Laos	1963	12-18	357	5.3[3]	2.25	1.5	2.1
Malaysia							
Malaya	1962	12-18	1 076	218.8[4]	15.90[5]	20.3	22.0
Philippines	1960/61	(11-16)[6]	(3 910)	(1 495.9)	(69.20)	(38.3)	(40.0)
		13-16	2 498	608.0	62.30	24.3	26.9
Thailand	1960/61	14-18	2 718	270.8	57.42[7]	10.0	12.1
Viet-Nam	1963/64	11-17	2 295	293.2	8.18	12.8	13.1
TOTAL			21 587	2 432.5	433.73	11.3	13.3

1. Data are from sources indicated in Table 4, notes 1 and 2.
2. Includes secondary-level teacher training.
3. Includes a roughly estimated enrolment of about 1,100 in private schools and another 950 in religious schools.
4. Does not include some 17,600 pupils of special 'remove' classes.
5. Does not include pupils of special up-graded classes with courses of varying lengths (about 6,700) and of private teacher-training colleges (100).
6. Including all intermediate enrolment; but not some 51,000 pupils taking special courses of a few months to two years at private institutions.
7. Does not include pupils of higher certificate of education and technical level of vocational education (both Grades 14-15 plus).

The private sector

The importance of the private sector[1] in schooling varies considerably. At the primary level private schools generally formed less than 4 per cent of the total—with the exception of Viet-Nam, which had nearly 40 per cent, and Singapore which had nearly 60 per cent. The percentage of enrolment in private primary schools ranged from 2 per cent (Malaya) to 18 per cent (Viet-Nam) with the special exception of Singapore, which had 48 per cent of private schools.

At the secondary level the private sector proportion of total enrolment ranges from 20 per cent in Burma to about 70 per cent in the Philippines and Viet-Nam, with a varied distribution between these points. Again it is found that the percentage of private schools is higher than the percentage of private enrolments, ranging from about 50 per cent (Burma and Malaya) to about 85 per cent (Philippines). Apparently the fee-charging private schools are able to maintain themselves with smaller classes.

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[1] Information supplied by Member States to the Japanese Government and Unesco in 1963 pursuant to decisions taken at the First Meeting of Asian Ministers of Education, held in Tokyo (1962).

Productivity

It is not unusual to find plans for educational development which pay little heed to the efficiency and productivity of the system they are busily expanding. Drop-out in public primary schools is a most serious factor of wastage, particularly after the first year of school life, except in Malaya and Singapore, and it continues to a lesser extent throughout the primary course. The incidence appears to be much less, save at terminal points, in secondary education. This is probably the result of three elements present in varying degrees and combinations: a selective entry that tends to eliminate the non-stayers (though not discriminating apparently between ability and social factors); better facilities for teaching and study; stronger and more conscious motivation, including the fact that parents paying fees for secondary education value the qualification of a leaving certificate, whatever form that may take. The rate of drop-out increases again heavily at the third level, where it may happen that the pace is too demanding, the continued cost is too heavy, an unsuitability for academic studies is at length realized, or a weeding-out process is applied by a university compelled to admit initially a wide or non-selective entry. Retardation is another factor which can clog a system and pre-empt valuable school places—Malaya is the only country in the region with a policy of 'automatic promotion'; hence elsewhere wide age-ranges in every class are generally inevitable.

A high level of retardation (students two years or more over average age for the class) is shown by Burma, where retardation averages about 50 per cent in the first two years of primary education and rises to nearly 70 per cent in the last two years. Viet-Nam reports an average of about 40 per cent of its pupils in public primary, and 45 per cent in private primary schools as over-age. The Philippines has a primary school retardation rate of about 23 per cent. In Singapore, fees are charged for over-age students who are kept back because of examination failure (except where these students are on social welfare allowances).

PRIMARY EDUCATION

Most of the countries of the region have adopted a six-year primary course rather than the seven-year course proposed in the Karachi Plan. (Pre-school education exists throughout the region but is largely provided by private initiative.) All of the countries either have, or have had, some form of basic primary school with courses of three or four years but these are being replaced at a fairly rapid rate by the full course. In the small villages of Burma, Viet-Nam, Cambodia, Laos and to some extent Thailand the village temple serves as the school and the priests have supplemented or acted as substitutes for regular teachers at the first stage of primary education. This system often requires a pupil to transfer to a full primary school at the end of the basic course and as a result there is usually a major drop in enrolment at this stage as well as after the initial year. Malaya claims to have succeeded in establishing six-year courses in all its primary schools—Indonesia has come close to doing so.

Small village schools are fairly widely distributed throughout the region, the village generally providing enough children for a two-teacher organization. The maldistribution of educational provision between rural and urban areas is therefore less serious at the primary level, a comment which unfortunately does not apply equally to quality.

In all the countries of the region a form of centralized control over education is exercised by the Ministry of Education or a department at ministerial level. Indonesia, however, offers a somewhat different pattern, as the content and supervision of education lie within the jurisdiction of the Ministry of Basic Education and Culture, but land, buildings, all matters to do with the appointment and salaries of teachers and the enrolment of children fall within the jurisdiction of the Ministry of Home Affairs. In all countries, private education is also under the supervision and control of the Ministry of Education and the curriculum is the same for public and private schools, although the medium of instruction may be different.

While all the countries of the region have adopted the goals of the Karachi Plan for free universal compulsory primary education, in practice many modifications are still found to be necessary. Free public primary education is available in every country, and many have legislation to enforce compulsory attendance. Cambodia has provided legal sanctions and Thailand, where compulsory education has been established *de jure* since 1921, claims 90 per cent effectiveness for compulsory attendance. However, financial considerations and the lack of any effective machinery have made the implementation of most of these laws an objective still to be reached. In some countries, compulsory education is being implemented in specified districts. Thus in Indonesia in 1961, 27 out of 172 regencies had implemented a system of compulsory education throughout a six-year course, and Burma has established a pilot project covering seventeen schools near Rangoon. The problem of enforcing sanctions without undue rigidity remains.

Most of the countries in the region have modified other aspects of their educational plans in response to various recommendations of the Karachi Plan,[1] which gives a useful indication of current views on problems of educational development in the region. Training programmes were envisaged both for educational administrators and for the staffs of teacher-training institutions; research was planned in the fields of educational building, the teaching of languages and child development; and the desirability of setting up a clearing house for the correlation of documentation and the results of research was stressed. Attention was drawn to the necessity for the production of suitable reading material in large quantities at reasonable prices and international financial assistance was invoked for a programme that could not be realized without massive external aid ($56,217 million for primary education alone). The participating countries undertook to establish their own internal machinery, including statistical, demographic, and costing units to undertake the programming necessary to implement the plan.

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[1] *The Needs of Asia in Primary Education*, p. 39-55 (Paris, Unesco, 1961. Educational Studies and Documents, No. 41).

This catalogue can scarcely be considered comprehensive, but in giving emphasis to training and research, and the nature of the machinery needed to undertake educational planning, a realistic attitude was adopted. Institutes for the training of administrators and teacher trainers have already been set up in New Delhi and Manila, and a School Building Centre was originally located in Bandung, Indonesia, whilst a Unesco Regional Office established in Bangkok is serving both as a clearing house for educational documentation and information, and, in conjunction with ECAFE, as a focal centre for detailed development of the initial plan.

Increasing emphasis is being placed on a more practical approach to primary education. Statements made by the Member States to the First Meeting of Asian Ministers of Education (Tokyo, 1962)[1] indicate that 'emphasis will not be on academic teaching . . . but upon the fundamentals of health, agriculture, animal husbandry and handicrafts which are required for the immediate improvement of the standard of living' (Laos); training must be given against the rural background and techniques of teacher training must be modified so that the teacher can, in his work, meet the specific needs of the community (Burma); Indonesia notes that there has been too much migration from the villages after primary school and is attempting a curriculum revision to adjust primary education to the needs of society so that the knowledge and skills gained at school will be beneficial to the village: to this end, courses in agriculture, animal husbandry, domestic science, co-operatives, etc., are included in the primary curriculum. Viet-Nam plans a revision of the curriculum 'with special regard to the teaching of civics and community education and a gradual change from the traditional type of school to the community primary school better suited to the needs of the country'.

It may, perhaps, be asked whether these attempts to provide a more realistic background to primary education should be based upon the content of education or upon teaching methods. It is true that the familiar experiences of the child in his environment should become the basis of teaching in school, but it may be doubted whether the vocational aspect of education either should, or can, be stressed during the first stage of school life. It might be well to concentrate in the first instance upon activity methods—a cliché of Western education but by no means a common-place of the Eastern primary school—upon child participation, the sparing and intelligent use of learning by rote, and an appreciation by the teacher of the significance of the work he is undertaking. A notable step in primary school reform through adapting rural teacher training to the actual situation of the schools within their communities has been undertaken by the Government of Thailand, in co-operation with Unesco. The marriage of the experience gained from this work with the research of the Bangkok Institute of Child Study should produce a study of considerable value to the region.

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[1] *The Needs of Asia in Primary Education*, op. cit., p. 3 and 4.

Primary education in the region is still patterned largely on the expectation of continuing education whereas in fact only a small proportion of those attending primary schools ever proceed to secondary education. Even in Malaya, with its high primary enrolment ratio, it is found that the percentage of entrants to secondary schools in relation to enrolments in the last year of primary education has dropped from 47 to 33 per cent in the period 1950-62. Nevertheless the curricula of primary schools seem to have been designed largely for the minority who will continue their education.

Leaving examination practices vary. Indonesia has no primary leaving examination, but examines for admission to secondary education. Burma, Viet-Nam, Cambodia and Laos hold primary leaving examinations. Malaya formerly conducted a secondary entrance examination, but with the introduction of nine years of free schooling in 1964 this has been abolished. Where final examinations are used, the pass ratio tends to be low—averaging under 60 per cent: in Cambodia ratios have been as low as 20 per cent.

Textbook production is everywhere inadequate to meet needs, whether officially sponsored as in Thailand or privately undertaken as in Indonesia. The Swedish Government amongst others has offered gifts of paper for printing primary school texts and Burma has taken advantage of this. In Indonesia, the Ministry attempts to provide books on loan, but funds are never sufficient. Even where parent-teacher associations help, the supply of paper and printing equipment is so limited that not enough books can be made available. Thailand and Laos have Unesco experts actively assisting in their textbook programme, but in Laos alone, the expert calculates that over 300,000 new books would have to be printed annually between 1965 and 1969 to meet the demand. In Malaya, the provision of an adequate supply of effective books in the national language as well as in the other language media has been an additional difficulty. The Philippines is attempting to reach a position where all pupils will be provided with textbooks within the first ten-year period of the Karachi Plan.

The Karachi Plan set out a supervisor-pupil ratio of 1 : 5,000 as the goal for Asia.[1] Present standards fall far short of this. Malaya has a ratio of 1 : 50,000 and about one-third of its schools remain uninspected, neither funds nor qualified staff being available. Cambodia has but one supervisor-inspector for each province, Laos has twelve for the entire country. The Philippines has a ratio of one supervisor to ninety teachers, a ratio which has dropped steadily from pre-war times, and is not increasing the appointment of supervisors in proportion to the rate of increase of teachers. However, a project is under way to up-grade the quality of primary education in accordance with recommendations of the Karachi Plan. Singapore alone has a supervisor-pupil ratio higher than that recommended by the plan, 1 : 4,600. In Indonesia, there is one supervisor for thirty schools, but in effect supervision is much hampered by lack of travel funds.

The role of the inspector or supervisor in different education systems is a varied one. In France he is responsible both for the evaluation of teaching and for the supervision of administrative requirements; in New Zealand until recently he was heavily occupied with the assessment of teachers' capacities in relation to promotion; in the United States the lot of administrator falls frequently upon the high school principal, often functioning as superintendent of a small contributory school system, whilst the duties of inspector have been replaced by the intense but narrow enthusiasm of subject specialists called supervisors. The system of peripatetic 'organizing teachers' is not uncommon in underdeveloped countries, by which outstanding or senior teachers are employed as wandering advisers to a small group of schools. In many countries the inspector is little more than a travelling auditor for the administration, preoccupied with student enrolment, scales of tuition fees, school buildings, furniture and equipment, school records, admission and promotions, correspondence and finance.

If these administrative tasks were carried out through the administration, and not by a highly experienced and successful teacher, the inspectorate would be freed to concentrate on the classroom, the children, the teacher and the content and method of classroom work, cross-fertilizing from school to school. Close co-operation between university departments of education and a competent inspectorate, combining the fruits of research and the judgement of experience, would enable a task force to be built up to deal with low classroom standards and the whole question of the quality of school output, and though this may be of more obvious significance at the secondary level it is on the foundation laid by the primary school that subsequent careers are founded.[1]

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[1] This ratio is normally expressed in terms of a supervisor-teacher ratio, but such figures except in over-all terms are without much significance and apt to be misleading since such factors as scatter of schools (urban or rural), travelling conditions, the amount of administrative supervision required, part-time teaching and specialized fields are all involved. Canada has a ratio of 1 : 100 in a number of rural areas.

It is possible that the new Regional Training Centre in New Delhi may be able to imbue its administrator students with some concept of the value of an adequate system of supervision and advisory services whose effect upon the morale and efficiency of the teaching service can be out of all proportion to the cost of the service.

The Karachi Plan was mainly though not exclusively concerned with quantity. Subsequently a meeting of experts was held in Manila under the auspices of Unesco on the quality of education in Asia.[2] Unfortunately, of the countries of the region, only the Philippines was represented at this meeting, which was concerned mainly with education at the first two levels.

The conference recommended, *inter alia,* that the potentialities of modern equipment and methods should be explored, that there should be a stronger emphasis on scientific education, and that secondary education should be designed to offer terminal courses as well as a preparation for higher education. Further, in an attempt to strengthen the morale of the teaching profession, it was recommended that there should be a basic salary scale for all teachers, regardless of type of training or level of school, differences in training and quality being recognized by increments to the basic scale.

Reference was also made to several other areas needing study—pre-school education, the fate of the gifted child, the role of examinations, and the lengths of the school day and school courses.

A number of programmes are already under way to improve the quality of education in various countries. Thailand has a project to orientate teacher training to the needs of rural areas, Cambodia is modifying the training of student teachers to focus on practical activities, Viet-Nam has begun a project for preparing community teachers to meet the needs of community-centred primary education. In the Philippines, the University of Mindanao gives in-service training by radio. In Indonesia, a Teacher Education Project has been formulated to establish model teacher-training schools in urban and rural areas, to study the revision of the curriculum, the adoption of new teaching techniques in primary schools and the organization of emergency teacher-training programmes. Burma has a project for the manufacture of simple scientific apparatus which at the moment has to be imported: Malaya is effecting a reorganization of the secondary system into comprehensive schools.

A number of educational research institutes are now active in the region. The Institute of Child Study in Bangkok is engaged on a study of patterns of growth and learning and relating these to curriculum content, and, again in Bangkok, the South-East Asia Regional English Project is working on basic research in linguistics and methodology, especially in Laos, Viet-Nam and Thailand.

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[1] See also p. 254 for recommendations concerning the role of the university in teacher training.

[2] Unesco, *Meeting of Experts to Consider Means of Improving the Quality of Education in Asia, Manila, 21-28 April 1964* (Report Unesco/QUEOAS/8).

The need for new functional and low-cost buildings, both to accommodate increased enrolments and to replace dilapidated structures (a category including as many as 50 per cent of existing buildings) is being studied by the Asian Regional Institute for School Building Research,[1] a Unesco project which is carrying out research and providing assistance to other countries in school design; particularly in encouraging the 'development group' technique in the planning of school building programmes. The necessity for research of this type may be illustrated by the situation in Viet-Nam where most classrooms accommodate double or triple shifts, and where children following the same primary courses as in France attend for only 3,000 instead of 5,000 class hours.

SECONDARY EDUCATION

Enrolment in secondary education as a whole is growing at over 7.5 per cent per annum and in Thailand the annual growth rate for 1955-60 has been as high as 14 per cent; yet in the region as a whole only about 13 per cent of the relevant age group is enrolled in secondary schools and there is great scope for planned development.

Of the total secondary enrolment, 85 per cent is in general secondary schools, and the rest includes a significant proportion in teacher training at the secondary level.

General secondary education

Academic courses are, in all countries, divided into at least two stages, specialization commencing after the first stage, generally of three to four years. The Philippines is the only country which offers vocational and academic education in the same school, though Malaya is tending towards a more vocational emphasis in her new comprehensive school programme. In 1960 a committee chaired by Dr. Sinco, then president of the University of the Philippines, recommended the adoption of a 3-2 system, three years of a core curriculum and a further two-year period as a preparation for further education or as a terminal vocational course. The fate of the plan is still unknown.

Special preparatory courses for university entrance beyond those required for secondary school-leaving certificates are to be found in Burma, Malaya, and Singapore. Burma offers a secondary leaving certificate after nine years, but the matriculation examination for university entrance needs a further year of study; Malaya and Singapore offer a school-leaving certificate after eleven and ten years respectively, but each requires an additional two years for university entrance, though admission to other institutions of higher education may follow the secondary school course. Thailand formerly had a two-year pre-university course; this is now called a higher secondary course. Viet-Nam, Cambodia and Laos in the French tradition have a two-stage examination at the end of the secondary school stage, the first part after the sixth year of secondary education and the full *baccalauréat* after the seventh year. The full *baccalauréat* is required for university entrance, but the first part is recognized as a minimum requirement for many kinds of employment.

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[1] It is proposed to link this regional institute to similar institutes at Khartoum (Africa) and Mexico City (Latin America).

In all countries of the region the curricula of the secondary schools are the same for public and for private schools; though in a number of countries private schools may teach in other media than the main media of instruction, particularly in Viet-Nam, where a few schools teaching in English and French are quasi-government schools. In all countries some allowance is made for small variations in the curriculum according to local conditions, and in the Philippines and Malaya there is considerable latitude in the choice of optional subjects. In the Philippines, more options, on the American pattern, are available—and the choice is left to the student. In Malaya the choice of optional subjects to be offered is left to the discretion of the headmaster and depends largely on the availability of suitably qualified teachers and equipment.

Indonesia has been endeavouring to emphasize the more practical aspects of secondary work, and has deferred the age of specialization. Optional courses, formerly available in the ninth grade, now begin only at the eleventh. Also, while in the past a school might offer only one course, now each school must offer the four basic courses (cultural, social, mathematical and scientific).

According to official returns supplied to the Government of Japan,[1] pupil-teacher ratios at secondary schools in the early 1960's averaged 28 : 1 throughout the region, only Viet-Nam and Cambodia having ratios of over 30. However, these figures seem subject to question—Indonesia for example has reported, on a rough estimate, a ratio of not less than 40 : 1 in the lower and 35 : 1 in the upper secondary schools. Similarly, class size in lower secondary schools in Malaya is approximately forty in urban areas where the majority of secondary schools are located.

Vocational secondary education

Though it is attended by only a small percentage of the total secondary enrolment there is a wide variety of provision for vocational education throughout the region.

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[1] *Educational Situation in Asia*, op. cit., p. 76, Table 15.

Most of the schools are specialized institutions, a number of them controlled by ministries other than the Ministry of Education: there are craft schools, agricultural schools, technical schools devoted largely to building, carpentry, fitting and light engineering of various kinds. For the girls, inevitably, there are schools of home economics. As might be expected, Manila and Singapore have flourishing commercial schools.

Two trends are noticeable: a tendency to defer technical education until the specialized stage of secondary education—and a move, to be seen in the Philippines and Thailand, towards a compromise between a second-level polytechnic and a comprehensive secondary school (the term 'comprehensive' as used in Malaya does not seem to carry the connotation of industry-guided technical education). This concept has been suggested among others, by Harbison and Myers:[1] 'It would be wise, therefore, to emphasize secondary schools with an optional range of courses (i.e., teacher preparation, technical subjects, and university preparation) within a single school rather than to proliferate specialized institutions. Such practice would reduce costs of staff, accommodation, and equipment, and it might also help to change the notion that the best students go to an academic institution while the less competent are relegated to the specialized vocational or teacher-training institutions.'

Indeed the argument goes on to suggest that in developing countries technical education is better undertaken by industry, which knows what it wants, has the skills available for teaching, will not over-train, and will save the public purse. Here, however, it is interesting to note that Hunter stresses the opposite point of view, stating that in the present stage of development there are few adequate opportunities for apprenticeship training. The missing elements are, of course, the general educational content which should be present in any course at the second level, the wastage likely to ensue through the use of instructors who are not trained teachers, and the over-specialized nature of the training. Nevertheless, the move nearer to a 'sandwich course' type of training is one which might well lead to major developments in urban areas other than the capital cities, where the variety of industrial opportunities and training is wide.

A further important measure that does not seem to have been pursued very far in most countries is the setting up of an efficient machinery between, on the one hand, the administration and conduct of technical education, and, on the other, the needs of employers and the conditions of work they offer. Indeed it might almost seem preferable, from the point of view of efficiency and human relations, to revert to mediaeval concepts of apprenticeship, had not the pressure of the machine age rendered the not unhappy or unfruitful relationship between master and apprentice obsolete. A machinery of consultation and guidance both for administrators and teachers, and for pupils, needs to be established, and whilst the interest of industry at the highest level should be sought, the importance of local committees of employers and educators, which must be given some positive authority, should not be neglected.

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[1] F. Harbison and C. A. Myers, *Education, Manpower, and Economic Growth*, p. 68 (New York, McGraw Hill, 1964).

Some problems of secondary education

The urgent necessity to increase secondary education facilities and the quality of the teaching in the schools is recognized throughout the region. Thailand in her North-East Development Plan, 1962-66, states that the emphasis in development will be on higher secondary education and on training in agricultural, technical and commercial subjects at that level. In the Philippines: 'In specific order of priority the new educational programme puts vocational, agricultural and technical secondary schools first, together with the necessary teacher-training facilities and the conversion of secondary schools into comprehensive ones with optional vocational courses. Primary, higher and adult education come next in that order of priority.'[1] Cambodia's Five-Year Plan provides for the improvement of teaching, secondary and higher education and, above all, technical education. Indonesia's Eight-Year Plan has as one of its aims the expansion of facilities in secondary vocational and technical education.

Everywhere there is greater demand for secondary places than the schools can provide. Entrance examinations are required in all countries of the region for secondary education save in Malaya where the Secondary Entrance Examination has been abolished, though the State examination at the end of the first cycle has been retained to screen admissions to the higher secondary level. Throughout the region, of those entering primary schools, less than half reach the end of the course: only Malaya and Singapore show figures significantly above average. Secondary entrance examinations then further severely limit the numbers entering the secondary stage. Once admitted, however, internal retention is generally fairly high, about 70-75 per cent of the entrants reaching the major examination barriers, though here again the failure rate in final examinations remains high.

At the secondary entrance level there is little or no guidance available concerning either choice of school or choice of career. In general, the grades obtained in the entrance examination are the main criteria for distribution between academic and vocational schools, the academic schools traditionally securing the more promising entrants. It has been said in Malaya that the candidates for the trade schools have not only been rejected by general

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1. *Secondary Technical and Vocational Education in Underdeveloped Countries* (Paris, Unesco, 1959. Educational Studies and Documents, No. 33).

secondary schools, but apply for admission to trade schools only after unsuccessfully seeking employment. The Philippines state that in secondary schools, guidance is an integral part of the curriculum. In Malaya, the Ministry of Labour is carrying out a vocational guidance programme in co-operation with the secondary schools.

The great majority of students in academic secondary schools have not been adequately prepared for the labour market when they leave school, and comparatively few of them proceed to institutions of higher education. On the other hand, neither do graduates of vocational schools always find it easy to obtain employment. A study of vocational school graduates in Indonesia indicated that expectations for employment were much higher than the openings actually available and that there was almost always a serious time lag between conclusion of the course and obtaining employment.

The material problems of secondary education are inevitably greater than those of the primary school. New and appropriate texts, particularly in the science fields, are desperately needed. The specialized needs of the secondary school—library, laboratories, workshops—call for costly equipment and substantial buildings, with all that that implies in maintenance. The secondary school also presents a number of social problems involving the acceptance or denial of co-education, the latter implying in some degree a rejection of social education, its broader staffing and its lower overhead costs. Again in many instances, the housing of pupils from remote areas in hostels, in approved lodgings, or wherever parents can find a bed, presents a further series of problems where financial considerations are apt to prevail over educational criteria.

A modern secondary education is an elaborate process. In most parts of the region its specialized needs are met in the teachers' training colleges: the same facilities have yet to appear in the schools where the elaborately trained novice is more often than not equipped solely with a blackboard, a stick or two of chalk and his own courage.

Teacher training at the secondary level

The position is summarized in Table 6. Such training for future teachers in primary schools is undertaken in all countries except the Philippines where all teacher training is given at the post-secondary level. Courses range from one to four years, Laos and Cambodia being the only countries which at present give a teacher-training course at lower secondary level, Laos having a four-year post-primary, and Cambodia a three-year post-primary course. The average student-staff ratio is 32 : 1.

Most countries hold competitive entrance examinations for these institutions and make student teachers an allowance during the period of training.

The Manila Centre for Teacher Educators sent out questionnaires to countries of the region concerning numbers of trained and untrained teachers

TABLE 6. Teacher-training courses: second level[1]

Country and year	Total number of institutions	Length of training (years)		Level for which teachers are trained
		Preparatory school course	Training course	
Burma, 1963	6	7[2]	1-2	Grades 1-4 and 5-7
		9	1-2	Grades 5-7
Cambodia, 1961	2	6	4	Primary
		10-12	1-2	Upper primary and lower secondary
Indonesia, 1961	537	6	4	Primary
		9	3	Primary
Laos, 1962	4	6	4	Primary
Malaya, 1963	16	9	3	Primary
		11	2	Lower secondary
Thailand, 1963	29	10	2-3	Primary
		12	2	Lower secondary
Viet-Nam, 1963	5	11(9)	2(1)[3]	Primary

1. Data for Burma and Viet-Nam have been taken directly from national sources; all others are from *Educational Situation in Asia*, op. cit., Vol. 2, Part II, Table 10, and Vol. 3, Part II, Table 32.
2. Plans are under way to raise entrance qualifications to Grade 9 pass.
3. Accelerated course of one year.

in primary schools. The results relating to the year 1959-60 are shown in Table 7.

The following countries made calculations of the numbers of primary teachers needed for the compulsory Education Plan.[1]

Burma: planned to open five more training institutions (the six existing institutes were to be exclusively engaged in re-training in-service teachers) with an annual production of 1,500 primary teachers a year. It was expected that 42,673 trained teachers would be available in 1964-65.

Indonesia: by 1968-69 an annual production of about 45,000 teachers will be needed.

Laos: would require 6,120 teachers by 1967, and 22,860 by 1980—salaries for these alone would exceed the present national budget. The actual number of teachers in service in 1961-62 was 2,576.

Malaya: the estimated output of teachers for 1961-65 was 11,500. The new comprehensive school programme would require over 4,700 new teachers for 1964, many of whom would come from present primary-school teachers or school leavers.

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[1] *First Meeting of Asian Ministers of Education* (Tokyo, 1962), p. 4-11.

TABLE 7. Percentage of trained primary school teachers, 1959/60

Country	Total numbers	Percentage trained
Burma	35 857	70.2
Cambodia	14 330	31.1
Indonesia (includes teachers trained under an emergency programme)	205 860	83.8
Laos	—	—
Malaya	38 773	64.5
Philippines	110 625	95.4
Singapore	9 131	28.3
Thailand	88 531	40.2
Viet-Nam	12 595	40.7

Viet-Nam: the number of teachers in training in 1961-62 was 6,497. Between 1962 and 1966, 2,500 teachers would be trained.

In all countries, teacher-training institutions at the second level are maintained by the central governmental authority. Private teacher-training institutions are found in Indonesia (about half of secondary level teacher-training institutions in 1959-60 were private). In order to raise the quality of teacher-training, Malaya is planning a 'sandwich' course for in-service training which emphasizes the continuous nature of teacher education. Indonesia has set up research centres at its Faculties of Education[1] and correspondence courses have been used extensively for emergency training. Thailand, in addition to carrying out research at the College of Education has instituted promotional examinations and 'twilight courses'—evening courses available to teachers in service which are extremely popular, but which are limited at the moment to the College of Education in Bangkok, and its branch at Bangsaen, some 65 miles from the capital.

The question of the recruitment, training, remuneration and terms of service of teachers in primary schools throughout the region, as the Manila Conference noted,[2] is one that calls for major research programmes and investigation. It may, for example, be questioned whether the divorce between university training departments and teachers' colleges, whether at the second or third level, and certainly at the professional, if not at the administrative level, is in the interests of the teaching services as a whole.[3] Clearly many of those at present recruited for primary education are not capable of working to higher education standards, but it is useless to rely upon either a sense of vocation or of escape from rural labour to compensate for a training which is not based upon the best staff available, and a living relationship with current educational thought, practice and research. No system of higher education can flourish if the roots of its undergraduates are poorly planted in the primary schools, or badly nourished in the secondary schools. In both situations there is an inescapable responsibility with the senior body to explore every means whereby the whole process of education is a continuous slope and not a series of escarpments only to be scaled with effort and determination.

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[1] Recently these faculties have been separated from the universities and brought under one centralized administration, IKIP, cf. p. 252.

[2] See above, p. 52.

[3] See also p. 254-7 for further discussion of this question.

II. Higher education

The number of institutions of higher education in the region is shown in Table 8, and the distribution of the student population over the various types of institution in Table 9. The categories are universities, technical institutes, teacher-training colleges, and 'other specialized institutions'. The figures

TABLE 8. Numbers of institutions of higher education, 1962/63

Country	Total	Universities	Technical institutions	Teacher-training colleges	Other specialized institutions
Burma	8	2	2	2	2
Cambodia	8	1	2	1	4
Laos	1	1	—	—	—
Indonesia[1]	261	26	2	...[2]	233
Malaysia:					
Malaya	11	1	1	7	2
Singapore	7	2	1	1	3
Philippines	416	26	2	8	380
Thailand	13	1	6	1	5
Viet-Nam	10	3	1	—	6[3]
TOTAL	735	63	17	20	635

1. The URAT draft report on Indonesia indicates for 1964 a total of 271 institutions comprised of 28 State universities, 179 private universities, 4 regional State teacher-training centres and an estimated 60 academies.
2. Information not available.
3. Including two schools of fine arts and two schools of music.

TABLE 9. Enrolment by type of institution (third level)

Country and year	Enrolment								
	Total	Universities	%	Teacher-training colleges	%	Institutes of technology	%	Other specialized institutions	%
Burma, 1961/62	16 880*	16 095	(95.4)	400	(2.4)	250*	(1.5)	135*	(0.8)
Cambodia, 1961/62	1 411	920	(65.2)	200	(14.2)	80	(5.7)	211	(14.9)
Indonesia,[1] 1962	97 102*	69 359	(71.4)	7 216*	(7.4)	5 752	(5.9)	14 775	(15.2)
Laos[2]	...	...		...		...		...	
Malaysia,[3] 1962/63	11 627	5 604	(48.2)	4 170	(35.9)	1 118	(9.6)	735*	(6.3)
	9 627		(58.2)	2 170	(22.5)		(11.6)		(7.6)
Philippines,[4] 1959/60	276 288	143 098	(51.8)	7 636	(2.8)	19 234	(7.0)	106 320	(38.4)
Thailand,[3] 1962	49 818[5]	7 265	(14.6)	2 650	(5.3)	5 000	(10.0)	34 903	(70.1)
	27 656		(26.3)	1 400	(5.0)		(18.1)	13 991	(50.6)
Viet-Nam,[6] 1962/63	19 135	17 419	(91.0)	—	—	243	(1.3)	1 473	(7.7)
TOTALS[3]	472 261	259 760	(54.8)	22 272	(4.7)	31 677	(6.7)	158 552	(33.6)
	448 099		(57.9)	19 022	(4.3)		(7.1)	137 640	(30.7)

* = Estimates.

1. The URAT draft report gives a 1964 enrolment of 184,000 of which 130,000 is in public universities and teacher training, 40,000 in private institutions and an estimated 15,000 in academies.
2. A Unesco survey carried out in 1961 gave a total of 116 Laotian students studying abroad in 1959/60.
3. Where two sets of figures are given, the upper set represents total numerical enrolments including part-time students and the lower set represents the full-time equivalent on the basis of approximately one-third.
4. The URAT draft report for the Philippines gives an enrolment of 416,000 for 1962/63, of which 50,000 are in State universities and colleges, 17,000 in other State institutions and 349,000 in private universities and colleges. This figure includes primary and secondary enrolments in schools attached to the universities and colleges.
5. Includes 196 graduate students.
6. Total enrolments include an unknown percentage (perhaps 10-20 per cent) of double registrations.

should be read with some caution. Whilst, in general, university enrolment accounts for at least half of the student population, the Thai figures for universities and other specialized institutions should be read together, since Medical Science, Law and Political Science, Agriculture, and Fine Arts, are at the moment segregated from the other disciplines. This is a matter of historical development: a second attempt in 1964 to merge these 'faculty universities' within a reorganization of the present university system was again unsuccessful. The Malaysian figure of 48.2 per cent is low since teachers' training colleges, and the part-time training of teachers in Singapore are outside the university system (which offers only post-graduate studies in education). Nevertheless, the demand for additional university provision in the Federation of Malaysia, whether Malayan, where there are indications of the establishment of a University College at Penang, or Federal, embracing the growing needs of Sabah and Sarawak, is abundantly clear. The Indonesian figures also call for some caution, since the designation of a number of private institutions, whether universities or in the specialized category, is not clear.

Institutes of technology are those offering technical or technical-scientific education in a separate institution. Indonesia has two State institutes of technology and two private institutes. Malaya and Singapore figures are for the Technical College and the Polytechnic respectively. The figure for Thailand covers the two Technical Institutes in Bangkok-Thonburi, but not the Faculties of Engineering or Architecture at Chulalongkorn University. The figure for the Philippines represents only institutes of technology and the Philippine College of Arts and Trade. It does not include regional schools of art and trade which are listed under 'Other'. Viet-Nam and Cambodia offer technical subjects only in separate technical institutions; the universities have no technical faculties.

Teacher training in Burma refers to a one-year course and does not include the university degree course: Cambodia is represented by the Institut National Pédagogique only. Indonesian figures include enrolments in private faculties of education together with a rough estimate of 5,000 students enrolled in government training courses known as B I and B II. Malaysian figures cover teacher training of all kinds, technical, specialized, and general, whether given in Malaya or in England[1] (except for small numbers in the post-graduate courses at the universities) and the Singapore Teachers' College which offers in-service courses only to part-time students. The Philippine figures refer to colleges devoted entirely to teacher training. About six times this number are enrolled in education courses in colleges listed under 'Other', forming about 75 per cent of the enrolment in this category.

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[1] The two Malayan teacher-training colleges in England have been discontinued since 1963 and 1964 respectively.

Table 10. Public-private distribution[1]

Country	Primary[2]		Secondary[3]		Higher[4]	
	Public institutions	Public enrolment	Public institutions	Public enrolment	Public institutions	Public enrolment
	%	%	%	%	%	%
Burma	...	94	61	80	100	100
Cambodia	99	95	59	...	100	100
Indonesia	86	...	80	...	34	78
Malaya	92	98	69	50	80	94
Singapore	40	52	35	...		
Philippines	96	95	23	36.8	12	12.5
Thailand	96	88	41	56.1	100	100
Viet-Nam	60	82	20	38.8	90	97

... = Not available.

1. Percentages are given of the total for each level.
2. The source for all primary-level figures, except Burma, taken from direct official sources (including registered private schools), is *Educational Situation in Asia*, op. cit., Table 1, p. 2.
3. The source for all secondary-level figures is E. A. Pires, *Primary Teacher Training in Asia*, p. 271 (Bangkok, Unesco, 1963). This source records no private schools at either level for Burma, as enrolments in private institutions are not normally given in national educational statistics. However in 1959/60, the latest year for which such data were available, enrolment in private schools at primary level was 5 per cent (82,500 out of 1,626,308) and at the secondary level was 2.7 per cent (50,330 out of 1,837,800). It appears that these private schools were still operating, in 1963/64 since reports indicate that a substantial proportion of new university entrants were graduates of private and mission schools.
4. The sources for higher education are miscellaneous official publications from countries concerned.

Viet-Nam offers teacher training at the post-secondary level only in the universities.

'Specialized institutions' covers all other types of higher education not mentioned above, including agricultural colleges, fine arts schools, religious universities and colleges, etc., and the Thai faculty universities. The very high percentage in the Philippines covers the numerous private liberal arts colleges which offer two-, three- or four-year courses predominantly in commerce, education and related subjects.

Table 10 shows the incidence of private institutions, and it will be seen that the private sector is of significance only in the Philippines and in Indonesia.[1] The Philippines is unique both in the extent of private higher education (87.5 per cent) and in its system of commercial profit-making colleges and universities. In effect this has left the two State universities and a number of other State institutions of higher learning free to limit admissions to student of higher calibre.

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[1] For comments on private universities, see Chapter 9, p. 291.

In Indonesia, private higher education is almost exclusively centred in non-scientific subjects and private institutions are, on the whole, much smaller both in enrolments and in courses offered, than the State universities. A law was passed in 1962 which regulates private higher education by classifying institutions on the basis of whether they may be allowed to give their own examinations (equalized institutions), to set examinations under the authority of the Ministry of Education (recognized) or to enter their students for State university examinations (registered).[1] Indonesia's State universities have, in most cases, evolved from private institutions which have demonstrated their standards and stability and have subsequently applied for and received State support in return for State control.

Malaysia and Viet-Nam are the only other countries where private institutions exist. In Malaya, two teachers' colleges are conducted by religious organizations but enter their students for State examinations; in Singapore, there are two theological colleges in addition to the Chinese liberal arts college Ngee Ann, and the hitherto private Chinese University Nanyang, which is rapidly passing more and more under State control, and is thus counted as a public institution. In Viet-Nam there is only the Catholic University of Dalat, but proposals have been made for a Buddhist University, and this may well be a private institution.

The basic organization of university courses in each of the countries of the region is summarized below.

Burma. A two-year general intermediate course is required, and can be taken at either the universities of Rangoon and Mandalay or at their several branch colleges. Courses then continue for two further years for a B.A., and three years for a B.A. honours degree in arts or science. Three years are also required for a degree in agriculture, for engineering or a further five years for medicine. Law and education are only offered as graduate courses after an initial arts degree and require a minimum of two years for their completion.

Cambodia. The university is composed of separate schools or faculties which are still in the process of unification. Examinations mark the standards—of *capacité,* usually two years after the *diplôme d'étude supérieure premier cycle* (i.e., at the conclusion of the tenth grade) or the *licence,* usually four years after the *baccalauréat*—a student must obtain *certificats* in a variety of subjects to obtain the *licence.* Medical students, after four years' study, have been completing their qualifications with a further three years in France. Certificates are also awarded for one-year preparatory courses in arts and in science.

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[1] A possible fourth category consists of institutions which have applied for registration and whose credentials are still under consideration.

Indonesia. Progression is by 'stages' rather than by years, though there is a rough equivalence.
Stage 1. Propaedeutic, usually one year.
Stage 2. *Sardjana muda* or *bakaloreat,* usually two years.
Stage 3. *Sardjana,* usually two years.
A first degree in engineering, however, now requires a minimum of only four to four-and-a-half years. A degree in medicine requires six years.

Laos. The political situation has not permitted visits to Laos by the study's consultants: however, such statistical material as it has been possible to obtain is assembled in the country profile, and used when possible in regional tables in this report.

The paucity of references to Laos is also explained by the fact that there is as yet no real university in the country. The institution called Sisavang Vong is a grouping of the National Centre for Political, Administrative and Legal Studies, the National Centre for Education, and the School for Medicine; but apart from a few in-service courses for administrators the teaching stops at the *baccalauréat* level. There are plans for establishing a school of agriculture, a national library and a national museum, the whole complex to form a *cité universitaire*. All forms of higher education have been followed abroad.

Malaya. In the Arts Faculty students study three subjects in the first year and may specialize in the second and third years. A 'unit system' has been established in arts to replace the former system of specialist courses (formerly called honours, to which students were admitted on performance in the first-year examinations). Honours degrees may now be awarded on merit for the general as well as for the specialist degree. In the Science Faculty, honours requires a fourth year; admittance is on the basis of performance in the bachelor's examination. The degrees in engineering and medicine require four and six years of study respectively.

The Philippines. Most degree courses require four years, but special preparatory courses are held for law, medical subjects, and some technical subjects. Engineering requires five, and medicine eight, years of study, the length of the courses offering some form of compensation for the short school life of ten years. It is fairly simple in the first two years to transfer from one course to another within the same institution. The unit system is used, students choosing electives and following prescribed courses in a major and usually two minor subjects. There is a great diversity of degrees and awards.

Singapore. At the University of Singapore a pass degree in arts or science is awarded after a minimum of three years' study, and an honours degree in science after four. At Nanyang University a first degree requires a minimum of four years' study. Medicine requires a minimum of six years' study (including a pre-medical year) for the award of a degree. At the Singapore Polytechnic, a professional engineering diploma or a degree at present awarded by the University of Singapore may be obtained after four years, a diploma in accountancy after three, and in architecture after not less than five years.

Thailand. Institutions in Bangkok other than Chulalongkorn and Thammasat have heretofore specialized in one field only—i.e., medicine, agriculture, fine arts, etc., but a plan is under way to diversify higher education so that one institution will offer both arts and science-technology courses. A diploma is generally awarded after three years of study, and a first degree after four or five years. Medicine requires at least seven years.

Viet-Nam. A first degree normally requires from four to five years of study, and the student must complete the five *certificats de licence* for the *licence-ès-lettres* and four for the *licence-ès-science* degree. Medicine, including the preparatory year, requires seven years of study.

Higher education is mainly concentrated in the largest cities in the Philippines and Indonesia and in the capital cities of the other countries. Where the private sector is significant there is a wider scatter but even these institutions are concentrated in the highly populous areas, Luzon in the Philippines and Java in Indonesia.

The concentration of institutions of higher education is also reflected in the siting of secondary schools. In Malaya, until very recently there was no school offering university preparatory studies in the east coast provinces at all, and all university preparatory classes were situated in a few large towns. Indonesia is endeavouring to overcome the urban-rural imbalance by the development of a State university in each of the provinces, including West Irian.

The location and urban character of the universities of the region are matters to receive further consideration in this report.[1] The decision as to whether to develop existing institutions or to break entirely new ground when expansion is necessary, involves a vast range of factors from finance to communication, from politics to climate, from local patriotism to national needs.

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[1] See p. 296-300 and p. 313-18.

ENROLMENT, DISTRIBUTION AND WASTAGE IN UNIVERSITY EDUCATION

It is easier to obtain data on enrolment than on graduation figures, but the following examples illustrate one of the major current problems of universities throughout the region, the ravages of wastage, particularly during the first year, which gravely limit the productivity of almost all universities, and from which Malaya alone, with its comparatively high entrance requirements and presently uncrowded facilities appears to be largely exempt.

Burma

Table 11 indicates the rate of progression through the year-by-year examinations at the University of Rangoon for two periods prior to the 1964 reorganization. Of a token 1,000 students taking the first-year examination, only 500 passed in 1955/56. One hundred and seventy-one repeaters evidently joined the successful 500 in the second-year examination, which about 65 per cent of the total group passed. At the end of the intermediate stage there appears to be a considerable drop-out, as only 286 applied for the third-year examination, about half of them passing. Again there are repeaters for the final examination, for which the pass rate is still less than half. The same comments may be made on the 1961/62 figures, save that there is a considerable increase in the number of successful candidates at the final intermediate stage continuing with university work.

It is clear that (a) large numbers are lost through the yearly examinations for promotion to the next level; (b) there is a considerable number of repeaters; (c) only a very small proportion of those who enter university finish the four-year course; and (d) the situation shows some improvement, though the wastage rate is still high. Again, as with the first two levels, it has not been possible to trace a cohort through the system, but if it may be assumed that the eventual survival rate of repeaters is high the wastage is actually heavier than the figures appear to indicate.

TABLE 11. University of Rangoon: wastage rates

Enrolments and passes	1955/56	1961/62
Intermediate 'A' enrolled	1 000	1 000
Passing 'A' examination	500	570
Intermediate 'B' enrolled	671	724
Passing 'B' examination	400	478
Bachelor 'A' enrolled	286	404
Passing 'A' examination	143	231
Bachelor 'B' enrolled	186	262
Passing 'B' examination	114	185

Indonesia

Such data as are available show a marked concentration in the first year of undergraduate studies (see Table 12).

The number of repeaters in the first stage is available only for 1956, when percentages varied between 30 and 66, averaging 44. Repeater rates were much higher in State universities than in private institutions (46 per cent to 21 per cent) and much higher in scientific-technical subjects, mostly in State universities, than in arts. The high proportions generally of first-stage students may be ascribed, (a) to the 'free study system' under which students frequently postponed presenting themselves for examination until they felt adequately prepared—a factor enhanced by the fact that many of them were part-time students working as well as studying; (b) to the rapid rate of growth of institutions of higher education, there being larger enrolments each year; and (c) to the establishment of many new institutions which had not developed beyond the first stage.

TABLE 12. Proportion of first-stage students to total enrolment

Field of study	1956		1960	
	State universities	Private universities	State universities	Private universities
	%	%	%	%
Arts	59.4	73.0	45.0	64.2
Science	65.0	61.0	45.2	54.1

The Philippines

A calculation similar to that for Burma has been made for the Philippines, but data on examination results are not available (see Table 13).

Except for private institutions, the biggest drop-out occurs after the two-year 'associate' level. There is also a high rate of wastage in that compar-

TABLE 13. Distribution of enrolment in Philippine universities

Year	State universities and colleges	Other public institutions	Private institutions
I	1 000	1 000	1 000
II	770	710	650
III	420	270	430
IV	340	220	350

atively small numbers finish the four-year course though the initial entry, particularly in the private institutions, is extremely large, with all that that implies in quality.

Thailand

Information is available for only two universities, and for different years—enrolments for each year are shown per thousand of the total enrolment (Table 14).

The drop between years III and IV is partly accounted for by the fact that a number of students, particularly in agriculture, leave with an 'associate' diploma.

In the University Medical School, admission has been so selective that drop-out due to examination failure has been very low: since 1959, the failure rate in examinations at each level has averaged 4.5 of enrolment in the first two and 2.2 in the last two years.

TABLE 14. Year of course by 1,000 of total enrolments

Year	Chulalongkorn University, 1962/63	Kasetsart University, 1961/62
I	328	239
II	252	242
III	220	227
IV	166	149
V	34[1]	132
VI[2]	—	11

1. Architecture, the only five-year course.
2. Only veterinary science.

Viet-Nam

The class distribution of students enrolled at Saigon during 1956/57 and 1962/63 in certain courses is shown in Table 15.

Three points are to be noted: (a) the high wastage rate in law; (b) the well balanced distribution of class enrolments in engineering, for which there are strict entrance examinations; and (c) the balanced enrolments in the last four years of medicine, a majority of the drop-outs apparently taking place before the third year.

A major question provoked by this section of the report is the subsequent fate of those who have dropped out. A number of investigations into what use has been made of the partial training acquired, and whether other types of institutions might have produced more effective results, is certainly called for.

TABLE 15. Percentage distribution of class enrolments in law,[1] engineering[2] and medicine[1] at Saigon, 1956/57 and 1962/63

Class	Law (three-year course)		Engineering (four-year course)	Medicine (six-year course)	
	1956/57	1962/63	1962/63	1956/57	1962/63
	%	%	%	%	%
I	72.7	74.0	32.0	25.8	28.2
II	19.0	18.0	25.0	23.2	19.4
III	8.3	8.0	22.0	14.9	17.6
IV			21.0	14.2	13.7
V				12.7	12.0
VI				9.2	9.1

1. Faculties of University of Saigon.
2. National Technical Centre.

TABLE 16. Total enrolments and percentage distribution between science/technology and arts

Country and year	Total population (thousands)	Higher education		All scientific and technical subjects	All other subjects[1]
		No. per 10,000	Total enrolment		
				%	%
Burma, 1962/63	21 505	8	16 880	35.7	64.3
Cambodia, 1962	5 447	3	1 411	36.4	63.6
Indonesia, 1962	97 019	10	97 102[2]	22.4	77.6
Malaysia,[3] 1962			11 627[4]	31.0	69.0
Philippines, 1959/60	27 456	101	276 290	30.1[5]	8.9
Thailand, 1961/62	26 990	18	49 818[6]	27.0	73.0
Viet-Nam,[7] 1962/63	14 100	14	19 135	43.0	57.0

1. Including teacher training.
2. Total enrolments include a conservative estimate of 5,000 in academies run by other ministries; roughly half of these are in scientific fields.
3. Includes Singapore, but not Sabah and Sarawak, where for the moment there is no higher education.
4. Includes 3,000 part-time students in teacher training.
5. It is possible that a number of science students are hidden in the liberal arts category and not represented here.
6. Includes 1,700 part-time students in teacher training and 29,000 part-time students at Thammasat.
7. In Viet-Nam it is possible to enrol in more than one faculty at a time: there may be from 10 to 20 per cent of such duplication. The science proportion here represents mostly students in science rather than in other technological subjects, unlike the other countries.

TABLE 17. Distribution of enrolments by subject (third level)

Country and year	Agriculture	Arts	Education	Engineering	Law and social science	Medicine	Science	Total
Burma, 1962/63	258	7 068	1 577	920	2 210[1]	1 458	3 389	16 880
Cambodia, 1962	—	185	200	80	513	313	120	1 411
Indonesia, 1962	3 312	18 925	22 857	8 165	33 583	7 334	2 926	97 102[2]
Laos,[3] 1962	—	—	—	—	48	—	—	48
Malaysia and Singapore, 1962	156	2 711	4 233	1 343	1 074	771	1 339	11 627
Philippines, 1959/60	9 373	49 218	51 762	42 220	92 161	28 450	3 106	276 290[4]
Thailand,[5] 1961/62	2 103	2 016	3 233	6 766	31 137	3 150	1 413	49 818
Viet-Nam,[6] 1962/63	176	6 478	1 073	468	3 455	3 141	4 344[7]	19 135
TOTAL	15 378	86 601	84 935	59 962	164 181	44 617	16 637	472 311

1. Post-graduate law course not included.
2. The URAT draft report gives the 1964 total enrolment as 184,000, and 1962 total enrolment as 136,000.
3. 116 Lao students were studying abroad in 1959/60.
4. The URAT draft report on the Philippines gives the 1964 enrolment as 416,000 but this figure includes primary and secondary enrolments in schools attached to universities.
5. Includes part-time enrolments.
6. Includes double registrations, and, in arts, students of fine arts, music and drama.
7. Includes pharmacy.

TABLE 18. Percentage distribution of enrolments (third level)

Country and year	Agriculture	Arts	Education	Engineering	Law and social science	Medicine	Science
	%	%	%	%	%	%	%
Burma, 1962/63	1.5	41.9	9.3	5.4	13.1	8.7	20.1
Cambodia, 1962	—	13.1	14.2	5.7	36.3	22.2	8.5
Indonesia, 1962[1]	3.4	19.5	23.5	8.4	34.6	7.6	3.0
Malaysia and Singapore, 1962	1.3	23.3	36.4	11.6	9.3	6.6	11.5
Philippines, 1959/60[2]	3.4	17.8	18.7	15.3	33.4	10.3	1.1
Thailand, 1961/62	4.2	4.1	6.5	13.6	62.5	6.3	2.8
Viet-Nam, 1962/63	1.0	33.8	5.6	2.4	18.1	16.4	22.7
AVERAGE	3.3	18.3	18.0	12.7	34.8	9.4	3.5

1. The URAT draft report for Indonesia gives the following percentage breakdowns for 1964 for public universities only: agriculture, 5.7; arts, 4.7; education, 26.8; engineering, 6.9; law and social science, 39.3; medicine, 13.3; science, 3.3.
2. The URAT draft report on the Philippines gives the 1961/62 percentage distribution as follows: agriculture, 1.8; arts, 15.9; education, 22.8; engineering, 10.5; law and social science, 38.3; medicine, 9.5; science, 1.2.

Table 16 (Total enrolments and percentage distribution between science/technology and arts) and Tables 17 and 18 (Distribution of enrolments by subject and percentage distribution of enrolments) have all been calculated on the basis of total enrolments. Unfortunately it has been impossible to identify and thus to exclude students enrolled in those courses which do not lead to full degree qualifications, such as associateships in the Philippines and diplomas in Thailand or diploma or *sardjana muda* courses in Indonesia. Consequently the data given in these three tables include enrolments in various types of higher education institutions, such as liberal arts colleges (in the Philippines), teachers' colleges, polytechnics, and institutions offering courses leading to degrees but controlled by ministries other than the Ministry of Education. The tables also include all part-time enrolments. (See Table 9: Enrolment by type of institution, for full-time equivalents.)

There is a distinct preponderance of enrolments in the arts over the science subjects, the ratio for arts (including social sciences), all scientific and technical subjects, and teacher education being 53 : 29 : 18. Furthermore, with the exception of Viet-Nam and Burma, enrolments in the natural sciences are exceptionally low. On the other hand it must be appreciated that there is a considerable concentration of part-time students in the arts subjects.

TABLE 19. Higher education: outputs by field of study

Country and year	Total higher education graduates	Sub-total all scientific and technological subjects	%	Engineering	Medicine	Agriculture and veterinary science	Teacher training	Arts, and social science, etc., including law
Burma, 1961/62	2 809	861[1]	(31)	111[2] 133[3]	166[2]	35[2]	494[2] (500?)[3]	954
Indonesia, 1961/62	7 772	3 423	(44)	. . .	250+	. . .	4 349	
Malaysia,[4] 1961/62	676	367[5]	(54)	17[2] 142[3]	94[3]	—[2] 30[3]	58[2, 6]	211[2] 40[3, 7]
Philippines, 1959/60	41 844[8]	11 148[9]	(26)	4 243	5 655	789	11 579	19 117
Thailand, 1961/62	3 689	1 542[10]	(42)	234[2, 11]	569[2]	574	325[2]	1 822
Viet-Nam, 1961/62	757[12]	254[13]	(34)[14]	54[3, 14]	121[2]	—[2] 46[3]	276[2]	184[2] 43[3, 15]

. . . = Not available.

1. Includes 416 in science.
2. Universities only.
3. All other forms of higher education.
4. Including Singapore.
5. Includes 84 in science.
6. There are about 1,800 students of teacher-training colleges certificated each year; if these were included, the ratio in column 4 would fall to about 14 per cent in scientific/technological faculties.
7. Does not include Nanyang, Ngee Ann or three of the five specialized institutions.
8. Probably includes graduates of two- and three-year courses also.
9. Includes 461 in science.
10. Includes 165 in science.
11. Degree awards only.
12. Does not include NIA graduates and *agents techniques*, but does include music and fine arts graduates.
13. Includes 33 graduates in science.
14. There is, however, a very considerable second-level output of technical diploma holders—some 450 in 1961/62.
15. From schools of fine arts and music.

Data on distribution by sex are available only for isolated faculties or institutions, and then for varying years. However, a general pattern emerges: in all countries except the Philippines, the average ratio for enrolments of women is about 20 per cent. In the Philippines it averages about 45 per cent, with a tremendous rise in faculties of education to 80-90 per cent. Everywhere female ratios are low in engineering and agriculture, higher in medicine and science and highest in arts and education. The question is developed further in Chapter 6.

OUTPUTS BY FIELDS OF STUDY

It has proved even more difficult to analyse the output of the universities than to secure details of enrolments: it will, however, have been gathered from the comments on wastage above that there is a deep gulf between input and output. Recent figures of the output by field of study (a) for universities, and (b) for all other post-secondary institutions are given in Table 19.

Teacher training

Two categories of teachers must be considered: (a) teachers for secondary schools trained in post-secondary teacher-training institutes of less than university standing; (b) secondary teachers trained in universities at graduate and diploma level. A number of university graduates also enter the teaching profession without receiving any training, whether as university teachers or as specialists in secondary schools: no data are available to enable a numerical assessment to be made.

The figures for Burma shown in Part I of Table 20 represent a one-year course after ten years of schooling to prepare teachers for middle schools. Malaya has a two-year course following ten to eleven years of schooling. Thai figures for graduates from the provincial teachers' colleges are not available, but enrolments for degree training courses requiring two years or more of post-secondary training were about 1,500 in 1962; some 500 graduates from these courses might be expected.

In Part II of Table 20 figures for Burma do not include post-graduate (B.Ed.) degree-holders as they already have a first degree qualification. For Singapore, the figures refer to post-graduate diplomas in education, usually awarded after one year's full-time study and training. For the Philippines the graduates will teach both in primary and in secondary schools. For Thailand diploma-holders (two- or three-year courses instead of the full four-year course) as well as full graduates are included; for Indonesia only the holders of the full five-year *sardjana* degree are shown: the much more numerous *sardjana muda* graduates (three-year course) or teachers trained in the B. I and B. II emergency courses, are not represented—data are not available.

TABLE 20. Graduates of teacher-training colleges and faculties of education

Country and year	Graduates	Country and year	Graduates
I. Graduates of teacher-training colleges		*II. Graduates of faculties of education (including graduates taking diploma courses)*	
Burma		Burma	
1956/57	345	1951/52	47
1959/60	492	1962/63	494
Cambodia		Indonesia	
1959/60	91	1953/54	8
1961/62	98	1959/60	626
Indonesia		Singapore	
1958/59	650[1]	1950/51	10
Malaya		1961/62	58
1954/55	279	Philippines	
1962/63	1 061	1957/58	8 058
Thailand		1960/61	11 579
1957/58	1 022	Thailand	
1961/62	1 402	1957/58	295
		1961/62	325
		Viet-Nam	
		1955/56	24
		1962/63	223

1. Special diploma-holders (B. I and B. II) only.

Public and business administration

Increasing recognition is being given to the importance of these studies in a developing society. In the new regional universities Indonesia is setting up four faculties of public or business administration; Malaya is planning a school of public administration in her Department of Economics,[1] Singapore has set up an Institute of Management, and Burma, with the assistance of the Ford Foundation, has expanded studies in the Department of Commerce of Rangoon University. In Thailand the objectives of the Institute of Public Administration at Thammasat University include the provision of graduate studies carrying out relevant research for government administration, and the operation of in-service courses for government officials (some 3-4,000 students had already followed such courses, largely on a part-time basis, by 1962).

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[1] Despite a caveat from Hunter (see Vol. III, Part 1, *High-level Manpower for Development*).

Under a contract with Indiana University, American professors are provided, and a number of Thai students sent abroad for further training after selection by a competitive examination. The institute has limited admission to 40-50 full-time students each year, and each ministry of the government contributes two of its graduate officers who are eligible for further promotion and have a good command of English. If their progress is satisfactory, they are given leave of absence with pay; if not, they are recalled after the end of the first year. Students follow courses for eighteen months, and on the successful completion of an examination may prepare a thesis for an M.A., which is completed by a *viva voce* examination. About 10 per cent of the students actually enter upon this stage.

Arts and law

Over half of all enrolments in institutions of higher education are in these fields, which exhibit an alarming rate of wastage, the ratio of graduates to enrolments being about 10 per cent. Table 21 indicates the growing output of the faculties concerned.

In countries where many of the students pay their own way enrolment in these fields is particularly high since these are the least expensive courses —a commentary both on the burning desire for a university education, and also on the need for guidance services at the secondary level.

TABLE 21. Graduates in arts and law.

Country and year	Graduates	Country and year	Graduates
Burma		Philippines	
1951/52	120	1957/58	18 054
1960/61	729	1959/60	19 117
Cambodia		Thailand	
1952/53	2	1953/54	502
1960/61	(15)	1961/62	1 822
Indonesia		Viet-Nam	
1952/53	20	1955/56	51
1961/62	3 718	1962/63	234
Malaysia			
1950/51	48[1]		
1961/62	251[2]		

1. Singapore.
2. Singapore and Malaya.

Science

In all countries, the production of graduates from the sciences as distinct from medicine, technology and agriculture is very low indeed. Even in the Philippines where enrolments are large, only 1 per cent of graduates in 1960 were in science. In Indonesia, although the over-all ratio of science-technology to arts graduates is fair (44 per cent), only a very small proportion graduate in mathematics, in physics, chemistry or other natural sciences. Only in Burma (8 per cent), and Malaysia (12 per cent), are there over 5 per cent of students in such courses, and in all countries the rate of increase in the 'pure' is less than in the 'applied' sciences.

Agriculture

Indonesia has already trebled the production of graduates from university faculties, and by 1970 instead of producing 100-125 graduates a year from one faculty (Bogor) some seven other existing faculties will have begun contributing and thirteen additional planned faculties should be in action.

In the Philippines, over 75 per cent of the graduates come from the State university and colleges, but here too output more than doubled from 359 to 789 in the four-year period 1957-60. Thailand has increased her production at a lower rate, but in less than ten years has more than doubled output from the agricultural university, from 214 in 1953 to 574 in 1961/62. (It must be noted, however, that more than half of these figures, unlike those of Indonesia, represent graduates of the three-year diploma course.) Again, the creation of two new universities, one in the north and one in the north-east, will add to the stock of agriculturists.[1]

Up to the present, Burma, and Viet-Nam have not appreciably increased the output of agricultural graduates: Burma has produced an average of about 51 per year between 1961 and 1964, and Viet-Nam some 50 graduates yearly from the agricultural college moved from Bao-Loc to Saigon in 1961. Malaya on the other hand has added an output of some 25 university graduates to a diploma output of 20-30 from the agricultural college.

Engineering

In engineering, data are available only for varied years, but all countries show at least a doubling of output (see Table 22).

The Indonesian production of engineers up to 1961/62 was almost entirely confined to the Bandung Institute of Technology, which with the adoption of the 'guided study' system has increased its graduate-enrolment ratio very considerably. It is to be expected that this trend will continue and that,

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[1] But see below, Chapter 5, p. 137 for comment on this output.

TABLE 22. Engineering graduates in selected countries

Country	1953/54	1957/58	1958/59	1961/62	1962/63
Burma	52	...	...	244	...
Indonesia	11	...	162[1]	...	...
Malaysia	64	...	...	159	...
Thailand	108	...	...	234[2]	...
Viet-Nam	...	23	...	...	48

1. This figure is probably too low. 1959/60 figures indicated total graduates in sciences as 2,796; these would undoubtedly include the lower degree *sardjana muda*, but if engineering bore the same proportion to total graduates as in earlier years, a figure as high as 1,000 might be expected: the figure of 162 is quite clearly the output of the *sardjana* degree or a four- to five-year course.
2. Does not include diploma holders.

including the new output from the Surabaja Technological Institute, the five other State engineering faculties and some ten private faculties, plus the several academies which specialize in this field, production will undoubtedly double again before 1970.

The expansion of engineering in Thailand is closely related to the type of agricultural training to be given in the new Technical Institute at Khonkaen. Malaysia foresees no new development in the immediate future and only a moderate expansion of the present faculty: engineering is a profession entered almost solely by the Chinese. The development of the Singapore Polytechnic into a Technical University is discussed in Chapter 5. Viet-Nam's production is largely absorbed at present by the armed forces and is still one of the smallest in relation to population in the region.

Medicine

The production of graduates in medicine does not show the same rapid rate of increase as in agriculture or engineering, but progress has been fairly steady in all countries (see Table 23).

The composition of these figures may differ considerably: the Philippines include nurses, dentists and pharmacists; Indonesia and Malaysia exclude the nurses. Cambodia until recently produced only *officiers de santé* who, to complete a medical degree, had to study for three additional years in France. Now, a full medical course is available, and twelve fully qualified doctors graduated in 1962. Indonesia will undoubtedly begin producing doctors in far greater numbers since, although up to the present only one or two institutions have been producing graduates, the programme of training the necessary medical school lecturers through contract arrangements will provide

TABLE 23. Medical graduates in selected countries

Country	1950/51	1953/54	1955/56	1957/58	1960/61	1961/62	1962/63
Burma	19	—	102	—	—	139	166
Cambodia	—	—	—	—	—	122	—
Indonesia	16	—	77	—	—	250+	—[1]
Malaysia	29	—	65	—	—	101	—
Philippines	—	—	—	2 945	5 655	—	—
Thailand	—	398	—	—	—	—	392
Viet-Nam	—	—	40	89	94	121	156

[1] According to the Eight-Year Plan, there would be 695 graduates in medicine by 1964/65.

more and more staff for the rest of the faculties and by 1970 the eighteen existing faculties should be producing a regular output of graduates.

Thailand is now planning the establishment of a new medical school in Bangkok; Burma has stated that her new policy is to increase emphasis on scientific subjects, and she has already opened a second medical school in Rangoon.

Viet-Nam has almost quadrupled production over the seven-year period 1955/56-1962/63 and a further expansion of the existing faculty is planned as soon as politico-economic conditions permit.

Malaysia's production will increase before 1970 when the new faculty, with almost the same capacity as the present faculty in Singapore, begins to produce graduates in Kuala Lumpur.

NON-UNIVERSITY TECHNICAL EDUCATION AT THE POST-SECONDARY LEVEL

The following notes give a bare indication of the nature and organization of the provision for higher technical education at present established in the region. (A number of countries are reported as being about to make considerable advances in this field, but plans are not yet available.) The information set out below is largely garnered from the Colombo Plan *Handbook*;[1] the study is responsible for the commentary on the situation thus briefly reviewed, which appears in Chapter 9.

Burma[2]

Two Government Technical Institutes offer three-year courses at Insein (Rangoon) and Mandalay in civil, mechanical and electrical engineering and, at Insein, in mining engineering to students who have completed a secondary education. There are six courses at Insein with an enrolment of 480 students, and four courses at Mandalay with an enrolment of 240. Three-year diploma courses in agriculture and two-year courses in veterinary science are offered by an Institute of Agriculture and a College of Veterinary Science. A number of public utilities such as the Rangoon Electricity Supply Board, the Inland Water Transport Board and the Burma Railways offer apprenticeship courses, but the majority of these do not require a full secondary course as an entrance qualification, and they all offer training rather than a further education. A number of short courses are available in forestry and agriculture and para-medical fields such as radiography and physiotherapy.

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[1] *Handbook of Training Facilities at the Technician Level . . .*, op. cit.

[2] No detailed information is yet available as to the effect of changes introduced by recent far-reaching legislation—see below, Chapters 5 and 6.

Cambodia

Vocational training at the second level is given either at the National School of Arts and Crafts, with a total enrolment of 600, or by on-the-job instruction given by public works and the railways. Third-level qualifications will be obtainable from the new Khmer-Soviet Institute of Technology when candidates with the required standards for entrance have been trained.

Indonesia

Considerable assistance to technical education has been given by the Ford Foundation and the Dunwoody Industrial Institute of Minneapolis.

Institutional training is the responsibility of the Department of Basic Education and Culture, which maintains forty technical high schools, a College of Technical Education and eight technical teacher-training institutes. Almost all government departments have instituted academies for the pre- or in-service training of technicians. Vocational training at a lower level is carried out at vocational training centres for which the Ministry of Labour is responsible.

Major courses of three years' duration at the third level cover all branches of civil aviation and the academies and senior technical schools offer courses as widely diversified as public health, sugar cultivation, pharmacy, laboratory technology, all forms of engineering, irrigation, shipbuilding, ceramics, batik and printing. All these appear to be training courses with some educational content for which the Ministry of Basic Education is responsible.

Laos

As yet there is no education at the third level in Laos. Two vocational training schools, two commercial schools, a school of administration, a medical school and a teachers' training college all function at the secondary level.

Malaysia and Singapore

Four levels of technical education are provided, three-year post-primary rural trade schools; secondary trade schools; secondary technical schools,[1] which combine technical subjects with a general academic education leading to the Cambridge Overseas School Certificate; and finally post-secondary diploma courses at the Technical College, Kuala Lumpur, and the Polytechnic at Singapore. The Technical College, admitting students after eleven years of schooling, offers courses in civil, mechanical, electrical and radio engineering, land surveying and architecture. These are four-year courses with one year's practical training, leading to the City and Guilds of London Institute examinations, and, a recent advance, the examinations of the professional bodies such as the Institutes of Civil, Mechanical and Electrical Engineers. The college admits students from Sabah, Sarawak and Singapore, and has accommodation for 500 full-time students. The Polytechnic at Singapore provides both part-time and full-time courses in engineering and technical subjects at professional and technical level: it has 875 full-time and 1,052 part-time places. It has been relieved of its craft courses and is on the verge of achieving university status.

Other training available at the third level includes a three-year diploma course at the College of Agriculture, Serdang, Malaya (the course should not be confused with the undergraduate course in agriculture at the University of Malaya), and a diploma course at post-School Certificate level to be opened shortly in Sabah, though its initial entry will be only twelve. Para-medical staff are trained in (a) a school of diagnostic radiography working to United Kingdom standards; (b) a three-year course in medical laboratory technology, both in Kuala Lumpur and in Kuching, Sarawak; and (c) a three-year course for dispensers. A five-year apprenticeship in ship-building and ship repairs is offered at Singapore, with day-release to Singapore Polytechnic, and a number of large private firms sponsor similar schemes. The content of the courses thus outlined is purely vocational.

There are also in Malaysia the usual wide range of on-the-job training courses offered by government departments. Schemes of apprenticeship given under the auspices of the Central Apprenticeship Board are training courses at the second level.

The Philippines

In the financial year 1962/63 there was a total enrolment of 577,897 in agricultural, trade and industrial schools at the secondary level: of this only 54,028 students were attending government institutions. A steady flow into industry in Manila appears to stem from the Philippines College of Arts and Trades, which teaches at the craftsman level, leaving training within industry to complete the process.

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[1] The effect that the establishment of comprehensive secondary schools will have on this organization is not yet clear.

Technical education at the third level, other than in degree courses, is provided in two types of course distinguished by length—diploma courses lasting for one or two years, and certificate courses for shorter periods. There is a particularly wide range of courses in agriculture ranging from M.Sc. and B.Sc. work to courses for extension workers, home demonstrators and fishermen; however, some 70 per cent of the extension workers and 90 per cent of the women demonstrators appear to be college graduates.

Third-level training includes a course in nuclear physics under Harwell-trained instructors offered by the Philippines Atomic Energy Commission, all types of engineering courses, the full range of civil aviation training courses, and training in less familiar subjects such as horology, official statistics and fats and oils technology. All these facilities are readily available, under Colombo Plan Technical Co-operation, for all countries of the region.

Thailand

Thailand is expanding facilities for vocational and technical training, and at the same time endeavouring to raise the level of the training so that there is a marked tendency to continue secondary education until a pupil has had ten years of schooling before starting on technical courses. The first Technical Institute in Bangkok has been supplemented by four others, one at Thonburi over the Menam river—the Bangkok-Thonburi complex is thus well catered for—and provincial institutes have been established at Chiengmai and Korat in the north and north-east and Songhkla in the south, all in association with the Bangkok Institute. In 1962 there were over 9,000 applicants for 2,500 places in the institutes and the three regional affiliates. A new Technical Institute at Khonkaen, patterned on the Thai-German Technical School in Bangkok, offers a three-year course after ten years of general education.

At the professional level only the Faculties of Science, Engineering and Architecture at Chulalongkorn University provide technological courses, but the situation is likely to improve considerably with the establishment of the University of the North-east at Khonkaen.

The other new university at Chiengmai will train in agriculture as well as in arts, social sciences, science and medicine. Engineering and architecture will be added in the next stage of development.

Possibly the most interesting technological development in Thailand, however, is the SEATO Graduate School of Engineering. This, however, is a regional project; it is not large, though significant, and it has seemed preferable to postpone a description and discussion of its activities until Chapter 12, which deals with regional co-operation and higher education.

Viet-Nam

There is a great shortage of technically trained personnel, and a general lack of buildings, equipment and staff. The Phu-Tho National Technical Centre in Saigon in 1963/64 had an enrolment of about 298 technicians in three-year secondary diploma courses in electrical, civil and chemical engineering and 282 post-secondary four-year diploma students.

The major difficulty is the lack of technically trained teachers, and in January 1963 a Technical Education Teacher Training Centre was opened at Phu-Tho.

EDUCATION AND TRAINING OVERSEAS

Unesco made a survey in 1961 of students studying abroad in 1959/60:[1] the figures relevant to this study are shown in Table 24.

Table 25, based upon a slightly later Unesco survey,[2] indicates similar percentages of third-level students from the region studying abroad and also indicates their distribution among the recipient countries.

Burma has a system of State scholarships whereby some 40-50 outstanding students are sent abroad each year. Malaya at present formally recognizes degrees from United States institutions only in the fields of engineering, chemistry, mining and fisheries, and those again only from certain selected institutions: all other equivalences are decided on an *ad hoc* basis. With the considerable number of Malaysian students overseas who study in the United States, further arrangements for wider recognition may be anticipated. Chinese students from Singapore and Malaya have traditionally gone to

TABLE 24. Students abroad

Country	Students abroad	Total enrolment in institutions of higher education	Percentage of students abroad to total enrolment in higher education
Burma	446	12 965	3.5
Cambodia	278	693	40.0
Indonesia	1 556	47 378	3.0
Laos	116	—	—
Malaya	2 487	6 233	40.0
Philippines	1 861	276 288	0.7
Thailand	1 403	35 631	4.0
Viet-Nam	1 904	8 267	23.0

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[1] *Study Abroad*, Vol. XIII, p. 678-83 (Paris, Unesco, 1962).

[2] *Unesco Statistical Yearbook, 1963*, p. 254-5 (Paris, Unesco, 1964).

TABLE 25. Distribution of third-level students abroad, 1961

Country	Total number of students abroad	Australia	Austria	France	Japan	United Kingdom	U.S.A.	Other countries
Burma	361	45	2	3	17	72	220	2
Cambodia	368	2	—	220	8	1	115	22
Indonesia	1 314	237	21	18	234	47	653	104
Laos	171	—	—	135	4	1	26	5
Malaysia:								
Malaya	2 975	2 325	—	—	89	303	151	107
Singapore	924	913	—	—	—	—	—	11
Philippines	1 906	44	4	6	19	28	1 780	25
Thailand	1 461	143	7	44	97	149	990	31
Viet-Nam[1]	2 349	75	2	1 753	25	17	388	89
TOTAL	11 829	3 784	36	2 179	493	618	4 323	396
Percentage	100	32.0	0.3	18.4	4.1	5.2	36.6	3.4

[1] Including North Viet-Nam.

China for higher education, but recently, with the opening of Nanyang University in Singapore this stream of scholar emigrants has dried up. Cambodia sends a large proportion of her students abroad, particularly in medicine. Viet-Nam affords a vivid illustration of a great general problem in that many of those graduating do not return to Viet-Nam—estimates of Vietnamese students living abroad rise as high as 5,000. No information is available on other considerable student migrations from Cambodia to Peking, and from Thailand and Indonesia to the Philippines.

In at least certain branches of advanced study and research it will for many years be desirable to make use of highly specialized facilities available in other countries. The extent of the use made of this possibility will naturally vary with the size of the country and its capacity to provide a full range of higher education, so that, for instance, Laos and Cambodia will, for some time to come, need to rely particularly heavily on opportunities abroad. But in general there is a need for caution to avoid the benefits of this being outweighed by both higher net costs and an unfortunate retarding effect on the essential growth of higher education within the country. Thus it is doubtful whether it is a happy circumstance that no fewer than 5,000 Malaysians are studying at all levels in Australia—either financially (particularly in terms of the utilization of valuable foreign exchange in a worsening balance of payments situation) or from the viewpoint of the future of education within Malaysia.

The important thing is that—except as the result of necessary temporary measures to satisfy both national and consumer demand—reliance on foreign facilities should not deprive either the earlier stages of higher education of the participation of the best young minds or the research level of its best potential students. Should this happen, the growth of a uniform mediocrity is inevitable, and the development of research in particular is likely to suffer, as not only in certain but all fields the most able will continue to 'escape' abroad. This may seem reasonable if standards and facilities at home, and even in the region, are at best second-rate; but they will certainly not improve if something is not done to control the escape mechanism. Currency and more general administrative restrictions may be doubtful partial answers; what is far more important is that, at least in areas of crucial importance to the nation (that is, those which are related to the application of science, technology, and the social sciences to current agricultural, industrial, and socio-cultural problems) there should grow an adventurous spirit of involvement in trying to build up the highest quality of imaginative research.

The corollary of this conclusion is that in so far as public support is directly or indirectly involved (including the provision of foreign exchange), only a carefully selected number of students should go abroad to equally highly specialized studies for which facilities within the country are not only insufficient but also, in terms of general need, not essential. In this connexion special attention must of course be given to those who might be expected, in general as well as by specific contract, to come back from study abroad to staff growing points of university education and research. Furthermore, there is no doubt that if the waste involved by much of the best talent not returning to the home country is to be avoided, it must be offered sufficiently attractive opportunities at home. These need not only be financial (for in this an underdeveloped country can hardly compete with an advanced one): status and the opportunity for creative work can be major incentives in the world of scholarship. So far as a time lag may be involved in the return of highly qualified persons and the provision of appropriate appointments for them, it is important that—as India has recently done, though perhaps insufficiently—a national-pool system should be established, furnishing the scholars concerned with both temporary financial support and an assurance of soon being provided with creatively useful employment.

3. Education—service and investment

The arrangement of those chapters of the report dealing with the relation first between economic and then between social and cultural development and higher education may give the impression of emphasizing a difference of aims, or even of values. In fact it is the position of this report that it is not basically a question of reconciling the two objectives, but rather of integrating two aspects of one broad function by a process of planning of which the objective is to reconcile the claims of the process of attaining economic equilibrium, the optimum exploitation of the natural distribution of talents and the satisfaction of the needs of young, vigorous and growing societies.

ORIGINS OF THE CONCEPT OF INVESTMENT IN EDUCATION

The insistence of present-day planners that education is a major factor in promoting economic growth has a respectable origin in the work of the classical economists.[1] Indeed it is in Marshall's *Principles* that a now well-worn tag makes its first appearance, and under the now familiar rubric 'education as a national investment' we read: 'We may then conclude that the wisdom of expending public and private funds on education is not to be measured by its direct fruits alone. It will be profitable as a mere investment, to give the masses of the people much greater opportunities than they can generally avail themselves of. For by this means many, who would have died unknown, are enabled to get the start needed for bringing out their latent abilities. And the economic value of one great industrial genius is sufficient to cover the expenses of the education of a whole town; for one new idea, such as Bessemer's chief invention, adds as much to England's productive power as the labour of a hundred thousand men. Less direct, but not less in importance, is the aid given to production by medical discoveries such as those of Jenner or Pasteur, which increase our health and working power; and again by scientific work such as that of mathematics or biology, even though many generations may pass away before it bears visible fruit in greater material wellbeing. All that is spent during many years in opening the means of higher education to the masses would be well paid for if it called out one more Newton or Darwin, Shakespeare or Beethoven.'[1]

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[1] The point is treated historically by J. Vaizey, *The Economics of Education*, Chapter I (London, Faber and Faber, 1962).

Here clearly is a well-formed concept of education as a necessary element in production, even though it is conceived in terms of genius rather than in levels of productive skills. The reference to Shakespeare and Beethoven is curious—neither can be characterized with any assurance as the end product, however remarkable, of the educational systems of their time. Is it possible that Marshall instinctively included as contributions to productive power elements in cultural as well as industrial development?

However, during the first half of the twentieth century, whilst Pigou, Dalton and, later, the Chicago economists were pursuing the concept and attempting to evaluate education as an economic overhead in the somewhat rarified atmosphere of economic theory, education, in the practice of those who financed and administered it, remained a consumer service.

An example of this attitude may be found in the approach of the United Kingdom to her underdeveloped tropical colonies where economic development had been retarded by ecological difficulties, an under-educated society lacking in knowledge and in skills, and an inability to accumulate capital or invest it productively.

In 1929 a fund was established under the Colonial Development Act to promote schemes of economic development. These did not cover any of the 'social services' such as education, which were considered to be 'welfare', and as such properly financed from local funds, presumably on the argument that since they were unproductive, their recurrent expenditure must be met from current revenue.

EDUCATION IN RELATION TO PRODUCTIVITY AND WELFARE

By 1940 it was clear that the principle needed a more imaginative interpretation, and a new 1940 Act included 'Welfare' in its title and education in its field of assistance. Even so, the distinction between productivity and welfare was maintained: thus in a contemporary policy statement we read: 'However able their government, however efficient their administration, many colonies cannot finance out of their own resources the research and survey work, the schemes of major capital enterprise and the expansion of administrative and technical staffs which are necessary for their full and vigorous development. Nor can they afford, in the absence of such development, an adequate standard of health and education services.'[1]

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[1] A. Marshall, *Principles of Economics*, Book IV, Chapter VI, para. 7 (London, 1890, 9th Variorum Edition, 1961).

Even at this stage education appears as a consequence of development, not as an essential contributory factor to it, and the references to research and high-level manpower, major elements in this contribution, are not seen at all in their educational context. Consequently, although now eligible for grant, educational projects were financed from that lower proportion of the available funds reserved for consumer services, and schemes involving capital expenditure were rigorously scanned to ascertain that the consequential recurrent expenditure could be met from the estimated current revenue of the recipient. As a planning measure this was admirable, but the suggestion was never entertained that loans might be floated to meet increased recurrent expenditure until the investment began to show a return in the shape of increased productivity and increased revenue to assist in meeting increased costs.

Thus, what might have been the first large-scale operation in the integration of educational and economic planning got no further than concurrent planning, the catalytic element of latent resources of manpower remaining unperceived—or at least undervalued. It must be appreciated, however, that whilst quick results were necessary in the general context of development and welfare schemes, the educational background of the labour forces involved had been largely predetermined.

In parallel with this incursion into educational planning at the first and second levels came a major British inquiry (Britain was the only country in a position to undertake such a task in the period 1943-45) into Higher Education in the Colonies. The Asquith Commission, whilst dealing with the over-all position, was supported by two related commissions in West Africa and the West Indies, and these set the pattern for the Carr-Saunders Commission (following up the work of the McLean Commission in 1939) which visited Malaya in 1947.

The financial background to this activity was still the Colonial Development and Welfare Act, but at the higher level different values were set upon education—the objectives were not mainly economic, but political and social; and of course the context was approaching self-government: 'To them [universities] we must look for the production of men and women with the standards of public service and capacity for leadership which self-rule requires. It is the university which should offer the best means of counteracting the influence of racial differences and sectional rivalries which impede the formation of political institutions on a national basis. Moreover, universities serve the double purpose of refining and maintaining all that is best in local traditions and cultures and at the same time of providing a means whereby those brought up under the influence of these traditions and cultures may enter on a footing of equality into the world-wide community of intellect.'[1]

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[1] *Statement of Policy on Colonial Development and Welfare*, p. 4 (London, HMSO, 1940. Cmnd. 6175).

These objectives are surely still, *mutatis mutandis,* equally relevant to the present situation in the region, though their concept of the development of human resources is limited to a humanistic role, and economic needs are not set out.

PLANNING DEVELOPMENT

The next decade, the 'fifties', saw a major development in the practice of development which may perhaps be analysed as planning, investment and training. This was a period when the simple demand for more technical education as the key to industrial development intensified into the more sophisticated study of graded and planned manpower training and deployment: thus in 1958 a basic tool was published by the International Labour Organisation in the form of the International Standard Classification of Occupations. Over-all planning may be exemplified by the planned French economy of Monnet and his successors, in which the public and the private sectors combined with remarkable effect, or the first of the Indian Five-Year Plans, resulting, *inter alia,* in specialized manpower studies in agriculture and engineering. In the U.S.S.R. a major educational reform in 1958 centred round the educational preparation of middle-level technicians to support the specialists whom the system was already producing to implement the forthcoming Seven-Year Plan. Whilst the centre of the debate was secondary education, repercussions reached higher education, in the form of obligatory student participation in productive work.

The general trends of the period have been summarized in a report of the Secretary-General of the United Nations: 'Recently there has also been much more widespread realization of the importance of the human factor in economic development. Research and experience have indicated that the contribution of physical capital alone is by no means as dominant as had at one time been imagined. This realization opened up new approaches—through education, training, community development, use of idle manpower and eradication of disease—to using the vast latent human resources of the developing countries. While at the beginning of the last decade the problem of the developing countries was viewed essentially as a problem of producing wealth, by the end of the decade it became widely acknowledged that the

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1. *Report of the Commission on Higher Education in the Colonies,* p. 10-11 (London, HMSO, 1945. Cmnd. 6647).

crucial factor was not production but rather the *capacity* to produce, which is inherent in people.'[1]

MARRIAGE OF ECONOMIC THEORY AND EDUCATIONAL PHILOSOPHY

The long-delayed marriage of economic theory and educational philosophy was not finally consummated until 1960, when a Commission on Higher Education in Nigeria published its report under the inspired title of *Investment in Education*.[2] (It must be admitted that the commission did not go on to calculate the amount of the investment they recommended—this was reserved for another inquiry when the bold objectives of the plan had been irrevocably welcomed.) The chairman of the commission was an educator, Sir Eric Ashby, Master of Clare College, Cambridge; the report was based upon a survey of 'High-level Manpower for Nigeria's Future' made by Frederick Harbison, professor of economics in the Industrial Relations Section of Princeton University.

There followed a spate of activity—a Policy Conference on Economic Growth and Investment in Education in Washington in 1961, sponsored by the Organization for Economic Co-operation and Development, the Mediterranean Regional Project, which 'represents an attempt by national research teams to assess the implications of economic and social objectives on the size and distribution of requirements for education in the period up to 1975'[3] and the establishment in Paris, under the auspices of Unesco, the World Bank and the Ford Foundation, of an International Institute of Educational Planning.

These are activities in which the economic element is very much to the fore: on the educational side there are the Unesco regional conferences and plans—the Addis Ababa Plan for Africa,[4] the Conference on Education and Economic and Social Development in Latin America held in Santiago in 1962, followed by the establishment of the educational planning section of the Latin American Institute for Economic and Social Planning at Santiago, and the Karachi Plan for Asia, revised and developed at Tokyo, also in 1962.[5]

It would also seem inappropriate not to include in this rapid survey of educational and economic planning the report, and six volumes of appendices

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1. *The United Nations Development Decade—Proposals for Action*, p. 2 (New York, United Nations, 1962. E/3613).
2. *Investment in Education*, the report of the Commission on Post-School Certificate and Higher Education in Nigeria (Lagos, 1960).
3. *Planning Education for Economic and Social Development*, foreword (Paris, OECD, 1963).
4. *Final Report of the Conference of African States on the Development of Education in Africa* (Paris, Unesco, 1961).
5. *Report of the Meeting of Ministers of Education of Asian Member States participating in the Karachi Plan* (Bangkok, Unesco, 1963).

compiled between 1961 and 1963 by the Robbins Committee on Higher Education in Great Britain, since that report, with its remarkable statistical apparatus, was intended 'to review the pattern of full-time higher education in Great Britain and in the light of national needs and resources to advise . . . on what principles its long-term development should be based'.[1]

THE EMPHASIS ON ECONOMICS

It will be seen that the trend in educational thought is clearly in the direction of education's contribution to development in its economic context, despite the obvious relevance of comments such as that of the Asquith Report. Indeed, of seven specialists associated with the field of the economics of education, and active participants in at least two of the projects mentioned above, John Vaizey, Arthur Lewis,[2] Michel Debeauvais, J. Tinbergen, Lionel Elvin, F. Edding and F. Harbison, all are economists or statisticians save Mr. Lionel Elvin, director of the London Institute of Education, and it is difficult to repress the fear that the development of educational systems may split into two levels—politico-economic planning and professional programming or administration.

The econometrist in particular has come to play a leading role in planning situations such as 'the quantitative adaptation of education to accelerated growth'.[3] The work of such authorities as Schultz and Strumilin in attempting to quantify the rate of return on investment in education; or of J. Tinbergen, both in his work for OECD and particularly in his study on the financing of higher education in Africa,[4] which is of special significance for Asian education planners, has opened new if intricate paths leading to a more scientific approach to the forecasting, costing and evaluation of the requirements and results of the educational process.

THE HUMAN FACTOR

This situation is not without its hazards, and perhaps the image of the child and the shades of Pestalozzi and Montessori cloud a little when the element of choice as pupils progress through an educational system is thus described: 'A peculiarity of the education system, regarded as a set of productive processes, is that it is supplied exogenously with a stream of raw material in the form of young children. As, with time, this raw material becomes increasingly fabricated in the higher processes of the system, purely demographic factors, which can be reasonably regarded as exogenous in an educational model, give way, at least in some degree, to decisions made by parents, educators, and the students themselves.'[1]

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[1] *Higher Education*, para. 1 (London, HMSO, 1963. Cmnd. 2154).

[2] Who remains first an economist despite a period of office as principal of the University of the West Indies.

[3] The title of an article by J. Tinbergen and H. Correa in *Kyklos*, 1962.

[4] *The Development of Higher Education in Africa*, p. 159-212 (Paris, Unesco, 1963).

It is certainly arresting, if not altogether novel, to regard an educational system as a cross between Moloch and Blake's dark Satanic mills.

Of course the humanistic values of education are always paid at least the passing tribute of a respectful reference: the Ashby Report[2] states: 'It would be a short-sighted policy to allow the educational system of a country to be controlled solely by "consumer needs" for manpower.'

The United Nations warns that: 'Although there has been increasing recognition that the ultimate objective of economic development is social progress, and that social reform is a necessary condition of economic improvement, these principles have not yet come to guide practical policies everywhere. Continued neglect of the social aspects of economic development might result either in stagnation in economic progress or violent reversal of the existing social order.'[3]

The OECD report on its training course for 'human resource strategists' states: 'The moulding of the human resources of an economy to fit the requirements of its productive arrangements is probably the most obvious way in which education contributes to economic development. But of no less importance is the contribution that education makes to providing the members of a society with an understanding of the technological, economic and social forces that affect their lives. Such understanding is not only a necessary condition for a viable political democracy, but it contributes to a dynamic economy in ways that have nothing directly to do with vocational preparation . . . the introduction of the masses of population to literacy and to the processes of rational thought would in itself be a potent stimulus to economic development in underdeveloped countries.

'For these reasons it would be a mistake to evaluate educational requirements and to plan educational programmes in the light of a narrow assessment of manpower requirements alone. For one thing, no one would hold that the sole function of education is to contribute to economic development; for another, the contribution that it actually makes to economic growth is not confined to narrow vocational preparation. These considerations argue for the necessity of broad cultural criteria, as well as manpower criteria, for the assessment of educational needs.'[4]

Only John Vaizey remains completely obdurate—or méchant: 'But we have to be careful not to desecrate what we would preserve by trying to reconcile two attitudes that should be ultimately irreconcilable: the pursuit of

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1. Professor Richard Stone, of the University of Cambridge, Department of Applied Economics, writing in *Minerva*, Vol. II, No. 1, Spring, 1965, and quoted, with some apprehension, in the *Times Educational Supplement* of Friday, 2 April 1965.
2. *Investment in Education*, op. cit., p. 7.
3. *The United Nations Development Decade*, op. cit., p. 6.
4. *Planning Education for Economic and Social Development*, p. 14 (Paris, OECD, 1963).

profit and the good life. It is a theme of this book that education can help to make us rich and, being rich (as Keynes pointed out), we can be free to be uneconomic.'[1]

What is clearly needed at this stage is the voice of the sociologist, and it is the argument of this report that it is in the university with its capacity (perhaps not always exercised) for an interdisciplinary approach to the problem, that the two sets of values can be, *pace* Vaizey, examined and assessed and the relative significance of their various factors equated to the needs of society during the span of whatever plan is under consideration.

A synthesis of the whole argument may be found in a recent speech of the Director-General of Unesco: 'It is education which sets a value on the human factor in development and which makes man capable of shaping his history. A country will never be developed unless education is developed. If you wish to replace the idea of developing a country's resources by a true idea of development, that is the advancement of men which will enable them to decide their own destinies, then you must provide them with education. It is through better education that the maximum use can be made of human resources, in which the developing countries are so rich.'[2]

Thus the following part of the report deals, first with the economic problems of the region and plans to overcome them, largely through the training and deployment of the region's greatest potential asset, its manpower; and then with the social aspects of the same problems—the preservation and transmission of cultural values and traditions and at the same time the presentation of a broad and scientific outlook to the social cadres best fitted to apply modern concepts to a traditional society in a stage of transition. It is in the light of these two aspects of development that the possible contribution of higher education to the progress of the region is then examined.

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[1] J. Vaizey, op. cit., p. 14.

[2] Speech at the closing session of fourth General Conference of the Canadian National Commission for Unesco, Montreal, 12 March 1965, quoted in the *Unesco Chronicle*, Vol. XI, No. 5, May 1965, p. 171.

4. Economic problems and development planning in the region

I. Some problems

CHARACTERISTICS OF THE ECONOMIES OF THE REGION

The United Nations Development Decade Resolution (1710) adopted on 19 December 1961 called upon Member States and their peoples to 'intensify their efforts to mobilize and to sustain support for the measures required on the part of both developed and developing countries to accelerate progress towards self-sustaining growth of the economy of the individual nations and their social development'. While emphasizing social reform as being a necessary complementary condition for the success of economic strategy and underlining the need for the development of human resources, the resolution proposed that, with population growing at an average rate of 2.5 per cent per year in developing countries, these should aim at a GNP growth of 5 per cent per year and at a substantial increase in their food production in the 1960's. For the developing ECAFE countries,[1] it was estimated that while population had increased by about one-fifth in the 1950's, food production had risen by one-third in the same period. Little more than a return to the comparatively higher 1934-38 level of consumption had been achieved, and about a quarter of the population remained suffering from hunger or malnutrition. It was considered that an annual 4 to 5 per cent increase in food production would by 1975 bring average dietary levels near Japan's current 2,300 calories per day.

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[1] While the Economic and Social Council's thirty-sixth session extended the scope of ECAFE to include Australia and New Zealand as well as Japan, the 'developing ECAFE region' is defined to include only the following nineteen countries or territories: Afghanistan, Brunei, Burma, Cambodia, Ceylon, China (Taiwan), Hong Kong, India, Indonesia, Iran, the Republic of Korea, Laos, Malaysia, Nepal, Pakistan, the Philippines, Thailand, the Republic of Viet-Nam, and, since 1963, Western Samoa. Subsequent references to ECAFE countries or the ECAFE region, unless otherwise stated, are restricted to these developing countries.

Before attempting to analyse the problems South-East Asian countries face in achieving sustained economic growth along these modest lines, it seems appropriate to recapitulate the basic common and distinctive features of their economies.

Together with other ECAFE countries they are in the early 1960's characterized by: (a) a high rate of population increase, ranging between 2.3 per cent (Burma) and 3.2 per cent (Philippines); (b) a predominantly agricultural economy in which, with the exception of Malaysia, 62 per cent to over 80 per cent of the total labour force is engaged in agricultural occupations; (c) a low *per capita* income[1] ranging between about $60 for Burma to $112 per year for the Philippines, and a high of $280 per year for Malaysia; (d) exports consisting almost entirely of primary products; (e) balance of payments difficulties and serious exchange problems of varying degrees of intensity, by which Malaysia and Thailand are least affected; (f) unfavourable terms of trade for primary exports and wide fluctuations in world market prices, which for rice, rubber, sugar and jute can show an average annual variation of around 20 per cent, with the range for certain specific products fluctuating between 5 and 100 per cent; (g) the recent development of an industrial sector which has generally grown at a somewhat faster pace than agriculture; (h) considerable dependence on foreign aid and loans; (i) the adoption of plans, ranging over a period of four (Burma) to eight (Indonesia) years, to guide development, although there is considerable difference in the degree to which private enterprise is included, the extent of their range and the effectiveness of their implementation.

On the other hand, the eight[2] countries of the region may be distinguished from the other ECAFE countries by the following features: (a) while their population growth tends to be about 20 per cent higher than for the ECAFE region as a whole, their population density is still comparatively low—the highest for Indonesia, the Republic of Viet-Nam and the Philippines ranging between 66 to 97 inhabitants per square kilometre as against 102 to 265 for Pakistan, India, Korea and Japan; (b) rice is the staple food for all countries and together with rubber forms the two major agricultural exports of the region followed, in varying order for different countries, by vegetable

[1] It is true that a comparison of the *per capita* figures may be misleading owing to the distortion of price mechanisms; nevertheless their cautious use as rough indicators is a usual practice. Thus it is now widely maintained that the real income of underdeveloped economies needs to be raised significantly upward—in the order of one-third to three times—if they are to be compared with those of developed countries. See: FAO, *Agricultural Commodities—Projections for 1970*, table M2, p. A4 (Rome, 1962).

[2] Now nine, including Singapore, whose economic situation, of course, is the totally different one of an isolated entrepôt and industrial complex.

oil and seeds, copra, sugar, timber, jute, tobacco, tea and coffee; (c) while food continued to form a significant part of imports, ranging between 11 per cent to over 20 per cent of total imports for all countries except Thailand (6.6 per cent in 1962), most of them raised their food productivity more than the rest of the ECAFE region.

In other respects the regional countries differ at least as much among themselves as from other ECAFE countries.

Burma, Malaysia, the Philippines and Thailand have achieved a somewhat higher rate of growth in GNP, ranging between 4 and 6 per cent, a greater degree of capital investment, and more rapid industrialization, especially in the field of substitution for consumer imports.

Such economic indicators as a low rate of growth and investment and a decline in *per capita* food production show Indonesia to be in the greatest economic difficulties. Together with Cambodia, Laos and Viet-Nam, Indonesia suffers from major problems of balance of payments and shortage of foreign exchange. However, in the case of the Indo-Chinese countries, these difficulties have until recently been offset by massive foreign aid (between 1950 and 1959 averaging nearly $8 *per capita* per year for Cambodia,[1] more than $19 for Viet-Nam,[2] and over $23 for Laos). Apart from Malaysia, Burma has received less foreign aid than any of the other countries in the region--from 1950 to 1959 only $0.06 *per capita* per year, which is less than one-fifth of what was secured by the next lowest recipient of foreign aid, Indonesia. Viet-Nam, on the other hand, was largely able to maintain its progress because of foreign aid, which enabled it to meet most of its balance of payment requirements and to finance essential imports of capital as well as consumer goods.

It appears that Malaysia, the Philippines and Thailand, which have enjoyed comparatively stable government and administration, have made significantly greater economic progress. But despite their special difficulties, Burma and Viet-Nam have not lagged far behind, though the reasons have been very different. Burma, notwithstanding major internal difficulties, has consistently managed to mobilize its own resources to a remarkable extent, maintaining a growth rate of well over 4.5 per cent in its gross national product between 1951 and 1961, though during 1961-64, with administrative problems of nationalization, this declined to about 4 per cent.[3]

In the region as a whole the annual growth rate of real aggregate product between 1950 and 1959 varied between a low of 3.6 per cent for Indonesia and a high of 6 per cent for the Philippines. The growth rate of *per capita* income for the same period ranged between 1.3 per cent and 3.9 per cent,

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1. Over two-thirds of the *per capita* per annum planned investment during 1960/61.
2. About 21 per cent more than the *per capita* per annum planned public investment during 1962-66.
3. Even so, Burma in 1964 had exchange reserves amounting to 1,175 million kyats, and for 1964/65 a trade surplus of 200 million kyats (U.S. $1 = Kyat 4.75).

of which the upper limit is probably an over-estimate. While in some instances available data indicate fairly high pre-war growth rates, after the war a considerable proportion of apparently rapid growth, with a relatively low capital-output ratio, consisted in fact of rapid recovery from war damage. As late starters, countries of the region have the advantage of being able to make use of available technological advance and experience, and given their great poverty and also the need to reduce the widening gap between advanced and developing countries, they must attain a higher rate of *per capita* growth than that of Western countries when approaching their take-off periods.

THE CASE FOR AGRICULTURAL EXPANSION

An adequate increase in agricultural production is essential not only to feed growing populations and ensure appropriate food supplies for the expanding industrial sector, but also to provide the financial base and raw materials for industrialization. Agricultural experts have for long maintained that this could be achieved by greatly increasing the productivity of arable land through the application of modern methods of cultivation.[1] Indices of agricultural production for recent years (Table 26) confirm both the need for and the possibility of better and more rapid results.

Until 1960, only Malaya and the Philippines showed significant progress, while Indonesia and Thailand kept just above the level of stagnation; but if it is assumed that the labour force in agriculture grew at the same rate as population (an assumption only minimally affected, at present, by the movement from rural to urban areas), *per capita* output remained static even in the first two countries and fell behind in the others. Since 1961/62 substantial new advances have been made by all countries except Indonesia, and in particular by Thailand, but major problems of increasing production and marketing export crops remain matters of urgency.

While in 1962/63 *per capita* food production has increased somewhat from the average 1953-57 level for the region as a whole, the increase has been substantial only in the cases of Burma, Cambodia, Thailand and Viet-Nam, averaging nearly 10 per cent over the previous average level. On the other hand, the Philippines and Indonesia registered decreases of 1 and 2 per cent respectively.

In Indonesia the decline is a result of the over-all economic problems with which the country is struggling, including a shortage of foreign exchange to import fertilizer as well as administrative instability and a lack of sufficient technical personnel and effective extension work. In the Philippines, however,

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[1] In certain cases where an optimal combination of techniques, including chemical fertilizer, irrigation and better seed, has been used, increases of four to seven times have been achieved. See FAO, *The State of Food and Agriculture, 1963*, p. 136.

TABLE 26. Indices of agricultural production[1] (1952/53 . . . 1956/57 = 100)

Country	Averages			Percentage increases			
				(2) over (1)		(3) over (2)	
	1952/53 1954/55 (1)	1957/58 1959/60 (2)	1961/62 1962/63 (3)	Total	Average annual	Total	Average annual
Federation of Malaya	96	112	126	16.7	3.3	12.5	4.2
Philippines	97	113	129	16.5	3.3	14.2	4.7
Thailand	94	105	143	11.7	2.4	36.2	12.1
Indonesia	99	107	110	8.1	1.6	2.8	0.9
Burma	99	104	117	5.1	1.0	12.5	4.2

1. Based on uniform FAO calculations abstracted from the *ECAFE Economic Survey, 1963.*

it is due to the increasing emphasis being given to export crops which fetch high prices in the world market and the consequential fall-off in the production of basic food crops for the domestic market—a situation aggravated by the inadequacy of measures of land reform which have failed to promote sufficient incentives for either farmers or plantation owners.

Apart from the question of how far an agricultural country should aim at self-sufficiency in food output, the desirability of growing new crops, either for export or home consumption, has to be considered. Within a few years Thailand has become the fifth largest exporter of maize, and Indonesia has doubled her own production over the last four years. This is a possible substitute for the rice shortages which in recent years have risen to 10 per cent of total consumption requirements. However, the successful introduction of a substitute for rice in the Far East (such as barley in South Korea) has provoked stubborn resistances to changes in dietary habits, and the problem remains—for the social anthropologist as well as for the economist and the farmer.

The nutritionist, too, is vitally concerned in this area of production, since, in addition to the shortage of staple foods, it is also necessary to increase the essential elements of a balanced diet, particularly to correct protein deficiencies.[1] The use of soya bean products had had some success, but much remains to be done in the development of fisheries and the distribution of their catch; in the local breeding of fresh-water fish,[2] particularly through the use of appropriate nutrients in the canals, irrigation channels and fish ponds and paddies; and in the development of live-stock, poultry and milk production. Only Viet-Nam exports meat and breeding animals; but the potential of savannah areas, such as those of north-east Thailand, awaits development: the production of pigs, for example, offers excellent opportunities, though these can only be seized fully in the non-Muslim countries.

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[1] In the Philippines, which after Malaysia has the highest *per capita* income, the daily intake of calories *per capita* was, for 1961, estimated to be as low as 1,830: this included only 43 grammes of protein.

[2] Though not Tilapia, since after an initial success with an increased fertility and a decline in size and weight, it has turned into nothing but a pest.

Even in humid tropical areas, irrigation, including flood control, plays a crucial role in ensuring increased and steady productivity (in the long-bygone days of the Khmer Kingdom a system of canals made it possible to grow three rice crops in the year, where now, for the most part, only one is grown). Today 17 to 22 per cent of arable land is irrigated in Thailand, Viet-Nam and Indonesia; in Burma and Cambodia, no more than 3 to 6 per cent.

Of equal, if not greater importance, is the more substantial use of chemical fertilizers. The basic difficulty here, apart from the popularization of their use (a typical example of the difficulty of introducing modern farming techniques), lies in the fact that since domestic production of fertilizers is in its initial stage most of them have to be imported, involving high costs and the expenditure of valuable foreign exchange. Even so, it would seem that the benefits of increased productivity would outweigh cost considerations (though where production for export is concerned, this is by no means always the case, since increased output may be more than offset by a corresponding fall in international prices).

In large-scale plantation agriculture, particularly of rubber, timber and other forest products, far-sighted management and continuing research assume special importance: thus, in the case of rubber it is desirable to design a replanting programme covering a total of 33 years. The neglect of such programming, or at least of acting upon it, has cost Indonesia drastic reductions in the output of rubber—whereas Malaysia, by giving full attention to improving techniques as well as maintaining systematic replantation, has reaped rich harvests of increased production and improved quality.[1]

Other required measures for agriculture as a whole include soil conservation and amelioration, the improvement of crop varieties and seeds, disease control, deep ploughing, pest control, and a variety of better techniques of cultivation. To develop these measures, constant research in the social as well as agricultural field is needed; extension services must convince farmers of the advantages of new techniques, while land reform and market conditions assure them that they themselves stand to gain substantially. Other specific socio-economic requirements are adequate transportation and distribution facilities and reasonable and efficient agricultural credit systems. Without the whole range of such an infra-structure, agriculture will make little progress; and in its absence, exhortation will only add resentment to

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1. Whether, so far as this has been achieved at the expense of diversification, a long-term goal has been sacrificed to a short-term gain remains to be seen.

the traditional conservatism of the farmer, which even in centralized socialist economies has frequently withstood the directives of the State.

TRADE WITHIN AND WITHOUT THE REGION

Even when all this is achieved, problems of the marketing aspects of agricultural development remain and at the same time lead on to the larger and more general issue of trade.

The South-East Asian countries largely depend on a very few products for the major share of their export earnings. In view of fluctuating prices, which in the past have often registered serious falls with increases in output, such dependence raises obvious dangers for national economies. The increased use of synthetics for rubber raises particular problems. While a basic demand for these primary products is not likely to die out in the foreseeable future, it will be necessary to develop a capacity to respond to world market trends, with adequate adjustments in production and supply. This involves both regional competition and co-operation. For South-East Asia the element of competition for markets is quite obvious and the desirability of coordination is as clear. The difficulties in the way of such co-operation are no less evident and the manner in which it may nevertheless be achieved is increasingly becoming a matter for joint concern.

The developing countries were until recently largely dependent on meeting their non-agricultural consumer requirements through imports from developed countries, paying for these through export earnings of raw materials. Marked changes in this pattern began to be introduced in the 1950's, when there was a distinct shift from a heavy reliance on manufactured consumer goods toward the import of capital goods and materials, due partly to general national development objectives, but largely as a result of unfavourable terms of trade for exported raw materials. It became increasingly clear that desperately required increases in national income depended critically on export earnings and that these could not be sufficiently increased through exclusive reliance on the export of raw materials. Efforts were simultaneously started to diversify exports—in particular by beginning the processing of raw materials and initiating the development of manufactured goods for export—and to reduce reliance on foreign consumer goods by making them, or substitutes for them, domestically. The latter step was designed to promote economic development and home savings as well as to save foreign exchange for essential developmental goods and materials. However, in recent years the situation has not improved, and the export earnings of agricultural output for the ECAFE countries as a whole have even lagged behind the growth of aggregate product.

With the exception of Laos, whose economy is in extreme difficulties due to internal instability, all other countries show a significant decrease in the import of food and other consumer goods as against capital goods and materials—increases in the percentage import of capital items ranging from a low of 4.5 per cent for Indonesia to 22.4 per cent in the case of the Philippines.[1] Furthermore, with the exception of Indonesia and the Philippines, there has also been an increase in the import of materials for capital goods and, in five countries, for consumer goods, in which cotton and cotton yarn play a major role.

Nevertheless, balances of payments have, except for Burma and the Philippines,[2] continued in a downward trend for net merchandise and for the net resultant of balances for merchandise trade, services, investment income, private transfers and debt repayment, which together may be termed 'financing deficit' in the balance of payments.

The achievement of Burma is even more remarkable in view of the fact that, while having to face special internal difficulties, it has received very little foreign aid. The Philippines recovery masks the fact that in 1961 its deficit of $136.5 million was double its previous two annual surpluses, which themselves were an exception to previous downward trends. Malaysia, despite its comparatively favourable position in the international market has rapidly moved from a surplus to a deficit.

Unhappily, the reason for the general situation is that, even while developing countries are endeavouring to improve their lot, the initial cost of industrialization in terms of importing capital goods and materials has tended to rise even more rapidly than previous increases in the cost of consumer goods. Nevertheless, no magic formula has yet been devised to replace the well-worn prescription for the approach to economic take-off as stressed in ECAFE's Economic Survey for 1963: 'It is through the building up of the industrial sector, supported by a complementary increase in agricultural output, that employment and average productivity in these [developing] countries may be increased rapidly enough to guarantee economic growth at the rate desired. In fact, industrialization and economic diversification can do more than merely increase income; they can provide varied occupations and promote the skill and discipline of the labour force and improve organization and management. By sparking off new hopes, they can broaden the horizons of the producers, increase incentives and encourage innovation.'

INDUSTRIAL DEVELOPMENT

Industrial development implies not only the substitution of local for imported consumer goods, but ultimately an entry into the field of production for export, particularly but not entirely within Asia—a more difficult venture which will encounter both tariff barriers and experienced competition from rival traders in the same market.

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[1] For the period 1951-62.

[2] Thailand also showed a marked recovery in 1964/65.

While considerable progress has been made in reducing the imports of consumer goods, these, not counting food, still account for between 18 and 35 per cent of total imports, with the exception of the Philippines, which has achieved a reduction to 9.8 per cent.[1]

Textiles

The Philippines, Burma, Indonesia, Thailand and Viet-Nam have achieved some of their most outstanding industrial progress in substituting home-made for imported cotton textiles. This is a field in which there is an assured domestic market, and even lower quality products can be marketed easily with the help of protective tariffs and import restrictions. Furthermore, the industry makes comparatively modest demands on capital investment, technical experience and skilled labour. It is for these reasons that, although only Burma grows cotton in any quantity and the possibilities of producing it in some other countries are still largely under investigation, four of the nine South-East Asian countries have, nevertheless, concentrated considerable effort on developing their textile industries—in three cases mainly on the basis of imported cotton and cotton yarn.

However, the textile industry also serves to illustrate typical difficulties often encountered in industrialization. Expansion in the Philippines has proceeded to a point where domestic needs are satisfied, but so far no effective steps have been taken to develop the export of textiles. Accordingly, it is estimated that established factories are now working to less than 60 per cent of their full capacity.[2] Nevertheless, further expansion is envisaged in the belief that it will be possible to promote a considerable export trade. The markets are certainly there—but success will depend on quality, competitive price, and adequate marketing techniques. In Indonesia, present productive capacity is just about sufficient to meet domestic needs, but factories are operating at only 50 per cent of their capacity since, owing to difficulties of foreign exchange, there is a shortage of essential imported materials, primarily spare parts and cotton.

Cement and chemical fertilizers

In considering two other industries oriented to the domestic market, cement and chemical fertilizers, it is to be noted that while considerable progress has been achieved in increasing the production of cement, particularly in Thailand, which meets nearly all its domestic requirements, Malaysia, which has nearly trebled its output between 1957 and 1962, and the Philippines, which in the same period raised it by 80 per cent, domestic production of chemical fertilizers has so far been largely neglected. Even for cement the contrast between the achievements of Thailand and Malaysia on the one hand and those of the other countries is very substantial. As there are in general apparently adequate supplies of basic raw materials and the transport costs of importing cement are high, there is a strong case for developing the cement industry to meet domestic demands that will increase rapidly with economic expansion.

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[1] And here smuggling is reported to be rampant on a large scale.

[2] This is probably due, at least in part, to cheap smuggled textiles on the one hand or to the desire for foreign prestige goods on the other.

The case for chemical fertilizers is even more obvious, and also essentially linked to increasing agricultural production. Yet countries in the region which could in time ensure an adequate domestic supply to meet requirements continue to rely heavily on imports, whose cost is enhanced, among other things, by high freight charges for this relatively heavy commodity.

Again, despite the establishment of so-called industrial complexes in the environs of capital cities and other major towns in provinces, most countries in the region have achieved little more than haphazard expansion without any co-ordination, resulting in a dispersal of effort and inhibiting any cumulative effect. Oil refineries are established, but remain isolated islands of prosperity rather than becoming the nucleus of a complex of petrochemical industries. Similarly sugar refineries are set up, but complementary industries fail to materialize.

Mineral resources

The consumption of refined petroleum products, and also their output, planned if not actual, forms a very substantial aspect of the economies of most South-East Asian countries, although only three of these are major producers of crude petroleum. Burma and Indonesia should be able to develop a cluster of chemical and fertilizer industries around oil refining, using its rich complex of by-products. Nevertheless, most countries in the region seem to be planning to become self-sufficient in meeting requirements for refined petroleum, when there are others in the region which could, in principle, meet their requirements cheaply, providing in exchange consumer markets for other manufactured products.

The region is rich in other mineral resources, but while tin and bauxite, of which Malaysia, Indonesia, and Thailand are the main producers, have for long been exploited on a large scale and production in recent years has shown no substantial increase, other minerals, including iron ore and coal, are only beginning to be produced in increasing quantities. Geological surveys in progress are likely to reveal new untapped resources and, in Thailand, have already shown that there are substantial deposits of iron ore. With rising world demands as well as plans for the establishment of steel industries in the region, there is apparently considerable scope for further investigation and improvement of the mining industry, particularly for iron ore, coal and manganese. Malaysia, the Philippines and Thailand have, since 1956/57, achieved substantial increases in the output of iron ore, Malaysia more than doubling its production to about 6.5 million tons in 1962. Malaysia also continued to lead the way in the production of both crude and refined tin. It supplies some 40 per cent of the total world output of crude tin, and refines 95 per cent of the tin output of the ECAFE region. Indonesia, on the other hand, has fallen back in the exploitation of its immensely rich resources on all fronts except oil, and even here oil refining and its allied industries have remained largely static. For the region as a whole it is clear that investments at all levels of the mining industry and at least in the first stages of refining and processing would pay rich dividends, if this included adequate attention to surveys, skilled management and trained manpower, research and modern equipment with an adequate maintenance service.

Steel

Most countries of the region, including Burma, Indonesia, Malaysia and the Philippines, are either establishing or have plans to set up steel plants. But while an efficient steel industry and its subsidiaries can provide the base for sustained industrial growth, all of these steel projects have an initial capacity below the minimim economic level. The domestic market is at this stage only beginning to become active and competitive export possibilities are limited. Full regional co-operation in meeting steel needs would obviously have been advantageous. Be that as it may, Thailand has given the highest priority to steel-making and the manufacture of products utilizing it. Its Promotion of Industrial Development Act of 1962 which confers special tax reduction, import facilities and other advantages, specifies top priority for steel-making, tractor production, and the manufacture of engineering machine tools.[1]

Power

Apart from shortages of entrepreneurial, managerial, and mid-level manpower skills, the biggest obstacle to industrial growth in the region has been the shortage of a sufficient and cheap power supply. However, the exploitation of great potential sources of power is proceeding rapidly, both in terms of actual increases and of targets for the future. These hydro-electric projects generally serve the basic needs of agriculture for irrigation and flood control as well as assuring an essential infra-structure for industry. In Indonesia, where schemes for setting up dams and electric power plants have fallen behind schedule, industrial and agricultural production have both suffered, not only in failing to achieve increases, but also in maintaining previous outputs or in realizing full capacity from industrial installations not bogged down by other shortages. Furthermore, despite current national projects, Cambodia, Laos, Thailand and Viet-Nam could gain immensely from the Mekong multi-purpose hydro-electric project, to which political rather than economic and financial factors are regrettably serious obstacles.[1]

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[1] The manufacture of acids, alkalis, chemical fertilizers and plastics is also covered by the Act.

GOVERNMENT CONTROL AND PRIVATE ENTERPRISE

There is in all countries some government control in all sectors of the economy. But the relative positions of the public and private sectors and the incentives given to the latter, including foreign private capital, vary considerably. Malaysia and the Philippines give primary emphasis to private enterprise and to attracting foreign capital whereas in Burma and Indonesia almost all industrial enterprise is State owned or, in the latter, if not owned, strictly controlled. Most governments have under various laws and regulations assumed powers which enable them directly or indirectly to influence private sectors to move toward one or another desired goal—the Pioneer Industries (Development and Regulation) Ordinance in Malaysia; the Promotion of Industrial Investment Aid in Thailand; the Basic Industries Act in the Philippines. In the agricultural sector, government land reform, taxation, credit schemes and extension services have a potential influence almost as decisive as State ownership.

Government services are largely responsible for that very considerable proportion of the national product which originates in the tertiary sector.[2] For the ECAFE region as a whole, the proportion ranges between 33 and 50 per cent, and for the South-East Asian region stands at a median average of 45 per cent with a range of 36-50 per cent. Apparently, so long as industrial opportunities are restricted, the overflow of labour from the agricultural sector tends to concentrate in the somewhat nebulous tertiary zone between agriculture and industry in various urban areas.

CONCLUSION

'For economic growth to proceed, or for the volume of investment to expand, an "economic" or even an "economizing" attitude must infuse people, institutions must arise or become effective as vehicles of social and economic change, and finally some "minimum critical effort" or "big push" must take place to jolt the economy into a "take-off".'[3]

In economic development, the most important factors are not so much the availability of raw materials for industrialization or even an adequate domestic market, as consistent policies, organization, public and/or private entrepreneurship, technical competence, and discipline. The key to success has three wards: (a) a foundation of political stability and the development of a sound infra-structure; (b) the conversion of an unskilled into a semi-skilled and skilled labour force; and (c) the provision of adequate productive opportunities outside agriculture, while at the same time maximizing agricultural output.

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[1] Recent progress on this project is noted on p. 404.

[2] Other occupations involved include small trading units, minor transportation, shops, taxis, garages and petrol pumps, restaurants, entertainment and professional and personal services.

[3] ECAFE, *Economic Survey of Asia and the Far East, 1961*, p. 21.

The argument of this section of the report,[1] with a possibly somewhat abrupt transition from the familiar jargon of education to the more esoteric vocabulary of the economist, does not stray as far as might at first be supposed from an inquiry into the functions of higher education.

Two themes have been presented: the necessity for increasing the productivity of the agricultural sector; and the problems of industrial development.

It will be the contention of Chapter 8 of this report that no attempt to promote rural productivity will succeed without the recruitment of new forces into the campaign, namely the results of university research, the pooling of university knowledge and experience, and the participation of university staff and students.

The successful development of industrialization has been shown to need the enterprise of the entrepreneur, managerial skill of a high order, an administration which does not confuse stability with rigidity, and a swelling output of technicians to support the work of an increasing number of technologists.

Both needs present boundless opportunities for the exercise of those functions of specialized teaching and research which are basic to all forms of education at the third level.

II. Some characteristics of national economic development plans

Having attempted to review the major economic problems currently facing the countries of the region, it is now proposed to examine the reaction of the countries themselves to these problems as revealed by their approved and projected plans for over-all economic development. The inquiry will then be narrowed down to the specific role of higher education in relation to the problems and policies thus set out.

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[1] In preparing this section extensive use has been made of the following important works of reference:
United Nations Economic Commission for Asia and the Far East:
1. *Economic Survey of Asia and the Far East*, 1960 to 1963.
2. *Economic Bulletin for Asia and the Far East*, Vol. XIV, 1963.
Far Eastern Economic Review—Yearbooks, 1961 to 1964.

RECOGNITION OF THE IMPORTANCE OF PLANNING

Despite differences in their political structures and different emphases on the role of private enterprise, all countries in the region have recognized the importance of planning, and, having drawn up plans of varying degrees of comprehensiveness, are in general[1] endeavouring both to implement these plans and to improve the national planning machinery (see Table 27). While aiming at rapid economic growth or establishing the necessary infra-structure, all plans give considerable emphasis to social and cultural development and stress the importance of raising living standards. Two fundamental approaches toward the end of supporting those market forces that are likely to advance and accelerate economic growth are adopted by all plans, though the balance and relative importance of these varies: the governments (a) make direct use of savings and foreign aid to effect investment and the management of resources for production, particularly in the sphere of economic and social infra-structures; and (b) adopt measures to facilitate, stimulate, guide and even control private economic activity.

BASIC OBJECTIVES

While basic objectives and final aims include such intangibles as the achievement of 'a just and prosperous society' (Indonesia) and of 'practices that will strengthen the moral fibre of our nation and reintroduce those values that would invigorate our democracy' (Philippines), the social aims, apart from adequate provision for education, health and social security, emerge as giving priority to providing sufficient food, clothing and proper housing for all; giving special attention to the improvement of living conditions in rural areas generally and backward regions of the country in particular; and ensuring employment opportunities not only in line with population growth, but also to overcome existing unemployment, primarily in urban areas, and under-employment, predominant in rural areas. It is in part recognized that, in the short term, such aims, involving a broad investment of limited resources, might conflict with the objective of achieving rapid economic growth; but the implications are more often than not either ignored or met through *ad hoc* measures.

[1] Laos, due to political instability, had to give up its short-term plan for 1962/63; Burma has radically changed its policy on the role of the State, and Indonesia has adopted new priorities. It is further necessary to stress that, while the importance of planning is everywhere recognized, its practice is in a rudimentary stage. Basic data are lacking and plan objectives are not always accurate guides for economic endeavour and activity.

TABLE 27. National development plans and some basic targets[1]

Country and plan	Growth indices in annual percentages			Gross investment as percentages of national income	Incremental net capital-output ratio
	Population	National income[2]	*Per capita* income		
Burma. Second Four-Year Plan, 1961/62 to 1964/65	2.3	6.0	3.6	15.0[3]	2.5
Cambodia. Five-Year Plan, 1960-64	3.0	5.0	2.0	15.0	3.0
Indonesia. First Eight-Year Plan, 1961-69	2.5	—	1.4[4]	—	—
Malaysia					
Malaya. Second Five-Year Plan, 1961-65	3.3	4.1	0.8	16.1	4.0
Singapore. Development Plan, 1961-64	3.5[5]	5.0-6.7	1.5-3.2	15.0-20.0	3.0-3.5
Philippines. Five-Year Integrated Socio-Economic Programme, 1962/63 to 1966/67	3.2	6.0	2.8	16.1	2.5-3.0
Thailand. First Six-Year Plan, 1961-66	2.0[6]	5.0[6]	3.0	15.0	3.0
Viet-Nam, Republic of. Second Five-Year Plan, 1962-66	2.5-3.0	5.0	2.0-2.5	—	—

1. Source: national plans.
2. GNP or GDP.
3. *Net* investment—in annual proposed targets rising from 15.2 per cent to 16.0 per cent at the end of the plan period.
4. Minimum target of 12 per cent *per capita* increase in income over eight plan years.
5. In fact, population increase between 1961 and 1963, according to the latest figures, was only 2.5 per cent. With an investment rate of about 20 per cent achieved during 1961-63 growth rates for this period were much higher than estimated: national income 9.2 per cent, *per capita* income 6.6 per cent, with a capital-output ratio of 2.2.
6. Revised from original estimates to 3.0 per cent and 6.0 per cent respectively in 1963.

Table 28, which gives data in absolute figures on planned development outlays and national products at the beginning and end of the plan periods, illustrates the basic features and implications of the plans. As distinct from the capital formation percentage, the annual average *per capita* investment shows wide differences which largely reflect the wide variations in *per capita* income. In the case of Cambodia and Viet-Nam, it must also be noted that the national product includes a very considerable amount of foreign aid—for

TABLE 28. Gross investment and national income[1]

Country	1962 population (millions)	Plan period	Private or public sector	Gross investment (in millions)		Average per year (in $)	
				National currency	$[2]	Total (millions)	*Per capita*
Burma	23.2	1961/62-1964/65	Public	2 629	553.3	110.7	4.7
			Private	2 700			
			Total	5 329	1 120.0	224.0	9.6
Cambodia	5.7	1960-64	Public	8 000	228.6	45.7	8.0
			Private	4 000			
			Total	12 000	343.0	68.6	12.0
Indonesia	97.8	1961-69	Public	240 000	5 333.3	666.7	6.8
			Private	...			
			Total	...			
Malaya	7.4	1961-65	Public	2 150	694.0	138.8	18.7
			Private	2 900			
			Total	5 050	1 630.0	326.0	44.0
Singapore	1.7	1961-64	Public	871	281.0	70.2	41.3
			Private	...			
			Total	...			
Philippines	29.3	1962/63-1966/67	Public	2 809	720.3	144.1	4.9
			Private	9 244			
			Total	12 053	3 090.5	618.1	21.1
Thailand	28.0	1961-66	Public	21 270	1 013.0	168.8	6.0
			Private	...[3]			
			Total	...			
Republic of Viet-Nam	15.0	1962-66	Public	42 000	1 200.0	240.0	16.0
			Private	...			
			Total	...			

... = Data not available.

1. Source: national plans.
2. Exchange rates generally used: $1 U.S. = 4.75 kyats, 35.00 riels, 45.00 rupiahs, 3.10 Malayan dollars, 3.9 Philippine pesos, 21.00 baht, or 35.00 piastres. Arbitrary as the selection of some of these rates must be, the errors involved by their employment to calculate indicators in U.S. $ are not likely to be on a greater scale than is likely to be the case with most broad indicators based on factors between which there is only a doubtful equivalence.

Beginning of plan period				End of plan period			
	National product				National product		
opulation millions)	National currency total (millions)	$		Population (millions)	National currency total (millions)	$	
		Total (millions)	*Per capita*			Total (millions)	*Per capita*
23.2	6 598	1 389.0	60	24.8	8 408	1 770.0	72.20
5.5	14 689	419.7	77	6.2	18 700	534.3	86.90
95.0	236 000[3]	5 244.5	55	116.5	324 800	7 217.8	62.22
7.2	5 458	1 760.7	244		...		(254.60)
1.7	2 020	651.6	391[4]		...		
29.3	12 862	3 298.0	113	34.8	17 841	4 574.4	130.30
27.4	57 222	2 725.8	100		...		(119.00)
15.0	82 000[4, 6]	1 366.7	91		...		101.00 to 103.00

3. *The ECAFE Economic Survey of Asia and the Far East, 1963*, however, estimates GDP for this year (1960) as 215,800 million rupiahs.
4. Rough estimates on basis of available data.
5. While specific data on private investment are not available, it is estimated that during 1951-60, the private sector contributed a minimum of 86 per cent of total domestic product in Thailand.
6. For national product, 60 Vietnamese piastres = $1.

Viet-Nam, during 1950-59, foreign aid amounted to $19 *per capita* per year, which is considerably higher than the planned annual *per capita* investment of $16. Furthermore, while, with some increase in *per capita* income, differences between countries are slightly reduced, major gaps tend to remain. Thus, even according to plans, though in percentage terms Indonesia will increase its annual *per capita* income faster than Malaya, by the end of 1969 this will still be $192 less than that of Malaya in 1965, as compared with a starting difference of $189 in 1960/61.[1]

In other words, while progress in ending poverty will generally remain painfully slow, unless population growth is reduced or investment increased, or both, the relative poverty of the poorer countries is likely to be preserved for a long time to come—which, of course, in turn restricts the *per capita* investment capacity of the country.[2]

RELEVANCE OF PER CAPITA INVESTMENTS

The size of *per capita* investment has a special bearing on educational and social services. Thus, in education, the investment per student is proportional: (a) directly to the investment *per capita* of population, and (b) inversely to the student/population ratio. This means that what ultimately counts in assessing a country's willingness and capacity to support educational growth is the planned *per capita* investment in education rather than the percentage of total investment or GNP. The comparative size of the *per capita* investment will determine either to what extent, so far as the financial factor is concerned, both quantitative expansion that involves a rise in the student population ratio and also maintenance or improvement of quality in the educational provision can be undertaken or, alternatively, that precedence will have to be given to one or the other. Plan provisions in South-East Asia show some interesting illustrations of this point. According to the annual average *per capita* total public investments shown in Table 28 and the share of such investment indicated as devoted to education in Table 29, in their plan periods Burma, Indonesia and Thailand will be able to spend only $0.24, $0.46 and $0.86 respectively on *per capita* annual public investment in education, as against $2.27 to be spent in the case of Malaya. Yet Thailand plans to allocate 14.2 per cent of its total public investment to education as against a 12.1 per cent allocation planned by Malaya.

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1. In this direct comparison, used to suggest only an order of magnitude, more realistic exchange rates would have made the comparison even less favourable to Indonesia.
2. More optimistic long-term perspectives of about fifty years, at an average cumulative *per capita* income growth rate of around 4 to 5 per cent, suggest more than a sevenfold to elevenfold increase in current *per capita* incomes. This would bring some of them near the lower or middle levels of developed countries in 1960.

CAPITAL/OUTPUT RATIOS

Significant differences in capital-output ratios, on the other hand, arise from (a) the stage of industrialization and comparative emphasis on light consumer industry as against intermediate and heavy industry; (b) the actual situation which involves low productivity due to factors that could be remedied by relatively small capital investments (particularly true during the post-war era, which in the case of Burma and the Philippines ended only with the beginning of the 1960's); and (c) policy on both industrialization and long-term modernization and diversification of agriculture.[1] The most remarkable example of the influence of these factors is to be found in the Philippines, where a capital-output ratio of 1.36 in the decade ending in 1960 is, in 1963-67, anticipated to reach at least 2.5 to 3.0. In the case of Malaya, both agricultural objectives—of diversification as well as long-term investment in increasing rubber productivity—and industrial expansion involve a higher capital-output ratio of 3.9. For Singapore which also has an ambitious industrialization programme, the ratio is somewhat lower, 3.0 to 3.5, because the sector of rapid-yielding processing and trade investments remains very large.

While the physical capital-output approach, so favoured in the past, remains fundamental, there has been a reaction to it which, basing itself on Western experience, has given perhaps over-much emphasis to residual factors that determine the way and efficiency in which physical capital investment is utilized. It is variously estimated by experts in Europe and the United States that physical capital formation accounted for only 25 per cent to 35 per cent of economic growth rates achieved in the past, the rest being due to more intangible elements, variously labelled technique, organization, or the human factor. On the other hand, without a considerable capital investment it is quite impossible for underdeveloped countries to acquire the plans and the skills to use them, since in their case technology is not evolving with the increasing experience and skills of its inventors and operators, but is being imported in an already highly evolved state from the West.

The entire fifth session of the ECAFE Working Party on Economic Development and Planning in 1959 was devoted to a discussion of objective criteria for judging the right proportion of development expenditure to be allocated to the social infra-structure. It concluded that 'no generally valid criteria were found'.[2] As so often happens, the dilemma is cyclic. Investment to improve health education and skills is basic since it creates 'the capacity to create wealth' and is essential to the common good that is, after all, the final objective of economic growth, which in itself has no intrinsic value. On the other hand, since the developing countries are poor, they must increase their limited resources to finance their social services more adequately, and in order to do so they must further strengthen their productive basis—they must create 'the capacity to create the capacity to create wealth'.

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[1] Even intensive use of chemical fertilizers which can, as has been noted, achieve remarkable results in increasing productivity, is a comparatively costly business.

[2] United Nations, *Economic Development and Planning in Asia and the Far East*, Vol. X, No. 3, December 1959, p. 56.

THE BALANCE OF INVESTMENTS

A further question is how to balance investment between agriculture and industry. Apart from the issue of intermediate and heavy industry, it has been universally recognized that industrialization, in one form or another, is an essential condition for the 'take-off' into sustained growth. Agriculture must play its part by ensuring an adequate base for industrial development, in particular through producing food for its workers, and raw materials for its machines, by increasing purchasing power within domestic markets especially in rural areas, and by earning foreign exchange capital. The two sectors thus always interact in ways which could be mutually beneficial. In many cases, each immediately promotes the other and depends on the same basic set of economic infra-structures. While a great variety of industries can be based on agricultural raw materials, industry can provide chemical fertilizers, implements and equipment for the modernization of agriculture, quite apart from the fact that the increasing prosperity of each ensures essential growing markets for the other. Hydro-electric projects and transport and communications can equally serve agricultural and industrial progress. Finally, applied research may and, indeed, should connect the potentialities of the two sectors to affect a consolidated advance. The principle of concentrating on those sectors of the economy which will best co-ordinate agricultural and industrial progress to produce optimum total results is thus universally recognized, but how far this is achieved remains a matter for further discussion and evaluation.

In addition to these unresolved considerations, most countries are confronted by the difficulty of planning on the basis of inadequate fundamental data. This means that in many cases plans may in fact be little more than vague estimates or hopes, or a series of unrelated sectoral objectives and targets. In education, this is particularly true of the general failure to relate educational expansion to the manpower requirements of the different economic sectors, though some effort is made to connect medical education with public health requirements and agricultural education with the growth of agricultural extension services. Thus all development is seen as 'a good thing' and ultimate policy is largely determined by immediately available resources, and policies of national prestige or popular demand (for example, universal and free primary education).

PROBLEMS OF INSTABILITY

Even more unsettling for rational planning are the situations of political

TABLE 29. Percentage allocation of planned capital investment in the public sector

Country	Period	Agriculture, including irrigation and forestry	Industry and mining (including power)	Transport and communications	Social services		Administration and related items	Other
					Total	Education		
Burma	1961/62 to 1964/65	14.6	19.9	29.4	18.9[1]	5.0	11.5[2]	5.7
Cambodia	1960-64	21.6	11.7	28.0	25.6	15.3	13.1	—
Indonesia	1961-69	15.7	33.9	25.1	11.1	6.8	14.2	—
Malaysia								
Malaya	1961-65	25.3	13.1[3]	20.2	23.0	12.1	18.4	—
Singapore	1961-64	6.1	38.7[4]	13.5	40.2[5]	10.8	1.5	—
Philippines[6]	1963-67	12.2	41.0	36.9	8.1	(8.4)[7]	—	1.8
Thailand[8]	1961-66	29.0	7.6	32.0	18.7	14.2	—	12.7
Viet-Nam[9]	1962-66	33.2	21.7	24.2	20.0[10]	13.3	—	0.9

1. Includes all construction separately listed under 'social services'.
2. 'Law and order.'
3. Power alone 11.9 per cent.
4. Includes allocation to support trade.
5. Includes 17.6 per cent for housing.
6. Percentages of total public and private sector.
7. Percentage allocation of public investment only.
8. Percentages of government appropriation for economic development expenditure.
9. Computed on the basis of sectoral allocations including foreign aid, the total investment amounting to about 46 milliard piastres, instead of the rough plan estimate of 42 milliard piastres.
10. Includes fresh-water supply works.

instability current in several countries of the region. These confound assumptions and policies and gravely interfere with the administrative machinery on which the implementation of plans depends. In this respect Burma, Indonesia, Laos and Viet-Nam, each in their own way have been most unfortunate. Since the 1962 revolution Burma has evolved a consistent policy, but internal strife has continued to eat into budgetary requirements for economic and social development. Indonesia has had no change of government, but internal and external conflicts have played havoc with planned objectives and approaches. Laos had only begun to plan when internal dissension made it impossible to make projections in any field. Viet-Nam clings to its Second Five-Year Plan, but changes in government as well as continuing guerrilla warfare leave it standing only as a declaration of faith, resting largely on the continuation of massive foreign aid, mainly American.

In Burma, political changes have apparently meant only that what was expected of the private sector has largely been given up and absorbed in the public sector with State control of higher education becoming complete, and its future development geared strictly to economic needs as interpreted by the government: no plan modifications appear to have been announced. In Indonesia, an economic declaration by the President gave renewed and top priority to self-sufficiency in food, adequate clothing and general agricultural development. At the same time an unprecedented effort was made to expand higher agricultural education and special stress was laid on increasing all scientific and technical education facilities.

SECTORAL INVESTMENTS

Table 29 shows the capital investment allocated to various major sectors of national economies. These statistics illustrate the fact that there is no general pattern common to the whole region, and marked individual variations in balancing allocations between different sectors will be found. However, while direct comparisons are in all cases subject to major reservations owing to the lack of any standard terminology and, in particular, the way in which allocations for administration may be counted separately or included under other sectoral heads, there are quite special considerations to be taken into account for the Philippines, Indonesia and Singapore. In the case of the Philippines, the fact that the private as well as the public sector has been taken into account has probably raised the proportionate level of investment in industry. But, even so, investment in the social services remains remarkably low; possibly private investment in education has been underestimated, particularly as a major proportion of secondary and higher education is financed by the private sector.

In Indonesia, public investment apparently covers only centrally planned projects, not regional or local government investments. Furthermore, as in

TABLE 30. Percentage allocation of public physical investment[1] by economic sectors[2]

Country and plan period	Planned or actual	Agriculture[3]	Industry and mining[4]	Electrical power	Transport and communications
Burma					
1956/57 to 59/60	P	27	28	17	28
	A	18	22	23	37
1961/62 to 64/65	P	23	———31———		46
Cambodia					
1960-64	P	29.2	15.1	10[5]	45.7
Indonesia					
1956-60	P	32	26	16	26
1956-58	A	27	22	10	41
1961-69	P	21	———45———		34
Malaysia:					
Malaya					
1956-60	P	33	2	27[5]	38
	A	30	2	31[5]	37
1961-65	P	37	2	27[5]	34
Singapore					
1961-64	P	10	38	29[5]	23
Philippines					
1957-61	P	22	28	20[5]	30
1960-62	P	31	24	17	28
1963-67[6]	P	14	———45———		41
Thailand					
1961-66	P	42	8	3	47
Viet-Nam					
1957-61	P	43	13	—	44
1962-66	P	41	16	12	31

1. Physical investment here excludes expenditure or social services.
2. Based on *ECAFE Report of Conference of Asian Economic Planning*, 1961, and national plans.
3. Including irrigation, forestry and fishery—in Cambodia also community development.
4. Including manufacture and construction even where separately given in plan.
5. Including small amounts of water supply.
6. Total public and private investment percentages.

the Philippines, the private sector plays a significant role in financing all levels of education. Singapore presents a unique situation because its economic activity is largely concentrated on commerce, in particular the entrepôt trade, and light industry: agriculture plays a relatively insignificant role. Finally, for Malaysia and Thailand, it must also be noted that since the

TABLE 31. Percentage distribution of employed labour force (latest available figures)[1]

Country and year(s), actual or planned[2]	Agri-culture	Industry and mining	Trade	Services	Transport and communi-cations	Miscel-laneous
Burma						
1953/54 (A)	62.9	10.0	10.6	4.4	2.4	9.7
Indonesia						
1961 (A)	71.9	7.9[3]	6.7	9.5	2.1	1.9
Malaysia:						
Malaya						
1960 (A)	58.7	12.6[3]	24.4[4]		4.3[5]	—
1965 (P)	56.4	14.9[3]	24.0		4.7[5]	—
Singapore						
1957 (A)	8.5	19.2[3]	26.0[6]	34.2	10.6	1.5[7]
Philippines						
1959 (A)	61.7	12.0	26.3			—
1967 (P)	48.5	20.2	31.3			—
Thailand						
1961 (A)	81.7	4.3	5.9	5.1	1.3	1.7
1966 (E)	81.0	5.6	6.2	5.5	1.7	—
Viet-Nam[8]						
1961	76.5	8.8	14.7			

1. Census data and plans.
2. (A) = Actual. (P) = Planned. (E) = Rounded estimates from Joint Thai-USOM Human Resource Study: *Preliminary Assessment of Education and Human Resources in Thailand.* This study estimated that the 1960 figure for employment in the agricultural sector was 83.3 per cent.
3. Includes construction.
4. In 1957, commerce accounted for 9.1 per cent out of a total commerce and services employment percentage of 24.1.
5. Includes utilities.
6. Includes processing of raw materials and water supply related to trade.
7. Mining and public utilities.
8. Rough plan estimate of primary, secondary and tertiary sector employment.

policy is to encourage private enterprise to bear the major responsibility for investment in industrial development, the public allocations for this sector give only a partial and, taken by themselves, a misleading picture of the importance given to it.

Nevertheless, if account is also taken of the further data provided by Tables 30 and 31, on percentage allocation of physical investment and the percentage distribution of the employed labour force, certain general characteristics as well as distinctive features do emerge.

The major emphasis is clearly on production and infra-structure. With the exception of Malaysia (Malaya and Singapore about 58 per cent), the total investment in these two fields together ranges above 64 per cent, with the Philippines actually planning on over 90 per cent, which, however, most probably includes a share of investment in administration and services.

While agricultural investment, including its irrigation component, remains predominant in four countries (Cambodia, Malaya, Thailand and Viet-Nam), in Singapore, Burma, Indonesia and the Philippines, investment in industry, mining, and electric power outweighs that in the agricultural sector. Indeed, as Table 30 shows, four countries have since 1956 somewhat reduced the agricultural share of physical investment, in particular the Philippines, where the percentage has fallen from 22 per cent to 14 per cent.

INDUSTRIAL LABOUR FORCE

Most countries, at least implicitly, expect an increase in the proportion of the industrial labour force. In the two wealthiest territories in the region where the expected increase is made explicit, a rise from 12.6 per cent in 1960 to 14.9 per cent is anticipated in 1965 in Malaysia and from 12 per cent in 1959 to 20.2 per cent in 1967 in the Philippines. Nevertheless, the major reason for the relatively heavy investment in industry and electric power remains due to the more capital-intensive character of industrial development. Thus, Burma estimated that while the investment[1] required to provide employment for each additional urban worker averaged about $2,105 per year, for the rural worker this only ranged between $495 to $733, depending on whether he was an 'own account' agricultural worker or engaged in non-agricultural activities.

With the exception of Malaya and Singapore, transport and communications occupy a predominant position, generally receiving an allocation of well over a quarter of capital investment, and reaching a high of 36.9 per cent in the case of the Philippines. Seen as a percentage of physical investment, it ranges between 31 per cent for Viet-Nam to 46 per cent for Burma. It is thus in practical terms regarded as an essential infra-structure for both agriculture and industry—and in addition a critical element in the preservation of law and order and the process of national integration. Thus the relative emphasis on this sector depends on social and political as well as economic factors.

INVESTMENT IN EDUCATION

Investment in social services, as in other fields, shows marked variations, but for six of the territories ranges at well over 18 per cent of total investment.

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[1] Including cost of housing, public utilities, and ancillary services.

High priority to investment in education is given by Cambodia, Thailand, Viet-Nam and Malaya, with levels ranging between 12 per cent and 15 per cent of total capital investment. The comparatively low levels for the other countries, ranging between 5.0 per cent for Burma and 10.8 per cent for Singapore, are in part perhaps due to certain educational expenditure being counted under other heads, such as construction, agriculture and health, in the case of the Philippines, partly to adequate account not being taken of private investment and, in the case of Singapore, to the comparatively advanced stage of educational development in a compact and almost entirely urban community. However, it also appears that in those countries there is a greater stress on investment in the physical and in other social infra-structures.[1]

Further major characteristics of the plans and policies governing them are outlined in the following brief comments on the two major economic sectors of agriculture and industry which, it will be noted, give renewed emphasis to several of the issues discussed in the previous chapter.

AGRICULTURE

Although all countries give high priority to self-sufficiency in food, the emphasis on the need for diversification is even greater. Furthermore, while the total volume of agricultural production is planned to increase at a rate of between 3 and 4 per cent and the highest anticipated rate of growth of food production appears to be around 4 per cent, export crop production is, in the case of Thailand and the Philippines, expected to increase at a rate ranging between 5.5 and 6 per cent. Indonesia, even with its new emphasis on food output, does not expect to achieve the required 9 per cent increase in rice production to meet the basic needs of the population in the remaining plan years.

Apart from the traditional export crops, the heaviest emphasis is being given to increasing the production of cotton, followed by jute, oil seeds, timber and other forest products.

To achieve such progress and diversification, all plans, in somewhat varying degrees, but largely in the order mentioned, stress the following required measures: irrigation (mainly for increasing paddy production and productivity); land reform, agricultural credits and marketing facilities, improved methods of cultivation; research and extension services; chemical fertilizers; mechanization.

Large irrigation schemes involving hundreds of thousands of acres, in the case of Burma increasing the proportion of irrigated cultivated land by over 100 per cent, are a common feature and obviously involve the employment of extension workers to ensure the proper usage of new facilities, as well as engineers and technicians to set up and operate the schemes, and a great deal of local labour.

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[1] See Table 29 on percentage allocation of planned capital investment.

Land reform has been recognized as a major incentive to increase productivity, ranking above agricultural credits, good market facilities and fair prices, except in Thailand, where most farmers already own their land. However, only Burma, Indonesia and Viet-Nam have so far achieved any real progress in their plans or associated measures.

Whilst all countries have emphasized the importance of research and extension work, it is the Burmese plan which is the most elaborate. It aims at ultimately increasing the pre-plan level of one extension worker for 20,000 to 30,000 acres to one for 5,000 acres. Concurrently, agricultural credit is to be nearly doubled; rates of interest reduced drastically (from a quite usual level of 12 per cent to not more than 3 per cent), and multi-purpose agricultural co-operatives expanded. These are also to function 'as the impulsive force and institution for social, communal educational and health activities'.

MINING AND INDUSTRY

Indonesia, which since the adoption of its plan has changed its emphasis, and the Philippines, have placed special stress on industrialization not only in substitution for formerly imported goods, but also to provide intermediate products and, in the case of the Philippines, goods for export. Four main objectives are to be found in the plans of all countries:

1. To ensure the infra-structures of electric power and transportation as a top priority, partly in response to demand, but also in preparation for increased requirements.
2. To concentrate on light and intermediate industries, particularly those which can be based on the raw material resources of the country.
3. To give priority to those light industries for which, despite small domestic markets, there is still enough demand to make home production profitable —the textile industry is an outstanding example.
4. To develop industries such as those producing daily consumer goods (e.g., plastics, processed foods and beverages, household utensils, soaps, etc.); cement; chemicals and fertilizers; oil refining; rubber products; manufactures of forest products, wood pulp and paper.

However, in many cases, iron, steel and metal products industries are also emphasized. Indonesia plans to set up three iron and steel mills which together would produce enough steel and steel products (over 350,000 tons) to meet about 90 per cent of national needs. The Philippines hopes that 42 per cent of its total private and public investment in the manufacturing sector will be concentrated on basic metals and metal production, including the establishment of two iron and steel mills, with an aggregate capacity of 360,000 tons per year.

In Malaysia, the Philippines and Thailand, where the primary emphasis in industrialization is on encouraging the private sector and the inflow of foreign capital investment in line with national economic development needs, the emphasis on infra-structure and incentives is naturally particularly strong. Apart from the provision of adequate electric power, fiscal measures and protectionist policies for pioneer industries, this has meant stressing the establishment of industrial complexes with a variety of attractive and efficient facilities, not only on the outskirts of metropolitan cities, but also in less developed but potentially rich regions.

In utilizing domestic raw materials and available traditional skills, the need for research, methods of improving and maintaining standards and of co-ordinating cottage industries with the more mechanized sector, and the attractiveness of goods for export, are all stressed. It is generally recognized that at home, as well as abroad, there is a consumer resistance to the products of newly established local industries. This in itself makes it essential to introduce measures that would ensure adequate, if not superior, quality and standards. Perhaps even more important is the recognition given to industrial research for the utilization of new or substitute domestic raw materials and the provision of facilities for testing out new materials and processes in pilot plants.

In Burma, the plan notes the importance of promoting cottage industries to absorb agricultural under-employment and encourages its significant contribution to the total industrial sector (amounting to about 46 per cent of total industrial production and 60 per cent of employment in 1957). In Viet-Nam a particular emphasis has been placed on rationalizing such cottage and other small-scale industries and on enabling them, at one and the same time, to provide low-cost semi-manufactured goods and to avoid competition with the bigger concerns in the market producing standard finished consumer goods.

Finally, the need for a more efficient exploitation of known mineral resources and, even more, the exploration of new ones is stressed, though funds allocated for the latter do not seem to be significant, much reliance apparently being placed on the initiative of foreign enterprise.

CONCLUSION

Reviewing the outlined plan objectives above, and the analysis of economic problems set out in the first part of this chapter, a number of salient features emerge, The expansion and diversification of agricultural production remains a primary objective, but the tempo of industrialization, particularly for import substitution of consumer goods, is increasing and four territories (Burma, Indonesia, Singapore and the Philippines), have allocated significantly larger capital investments to the industrial sector. To increase agricultural productivity, considerable emphasis has been placed on irrigation (but perhaps not enough on the introduction and use of chemical fertilizer). Social factors involved in raising productivity—such as land reform, co-operative techniques, and various forms of incentives such as market control—have also been recognized and their implications partially worked out. To support industrialization, high priority has been given to the development of electric power. This, in so far as its distribution gradually reaches into rural areas will, like certain other industrial developments such as the production of chemical fertilizers and the manufacture of farm implements and cement, play a leading role in the modernization of rural life. The uniformly heavy investment in transport and communications will also serve social ends—not the least of which is national integration—as well as meeting the outlet needs of both agriculture and industry, helping to realize their interdependent potentialities for growth. Social services have, save in Indonesia and the Philippines, received nearly as much attention as transport and communications, and in terms of total investment the other countries give this area an importance which is either greater or nearly equal to that attached to industrialization.

However, while the problems raised by a high rate of population growth are recognized, no specific attention is given to the problem of reducing the birth rate, although public health and social welfare schemes are otherwise far from neglected. Unless high priority is given to tackling this problem through a variety of measures—including family planning associated with adult education, community development and extension work—individual standards of living will improve only very modestly even with a fairly high GNP growth of 6 per cent per year. It is not inappropriate to remember that in countries of the European Economic Community, for instance, the *per capita* GNP is growing at a rate of 3.6 to 4.5 per cent, not because these countries have a higher over-all rate of economic growth, but because their populations are growing at an average of about 0.75 per cent. Many social and cultural factors are involved in this situation and require widespread and intensive study; but if action is to be taken, it will be necessary to re-evaluate and re-orientate the social services—in particular the role, education and training of social, public health and extension workers will need review —for nothing less than a massive effort can achieve significant results.[1]

The share of total public investment allotted to education varies between 5 and 15 per cent, and the differences are increased if the investment is considered in terms of absolute amounts *per capita* per annum, ranging from $0.24 for Burma to $4.47 for Singapore, with a median figure of about $1. Furthermore, it is not possible to find any planned correlation between either percentage or absolute investments in education and other investment targets and objectives of the plans.

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[1] Singapore, even while reducing infant mortality and the over-all death rate, found the rate of its population growth declining from 4.3 per cent during 1947-57 to 2.5 per cent in 1960-63.

This is no doubt largely due to the fact that, except for certain specific areas like public health and agricultural extension work, no manpower studies have been available for planning and, apart from assuming that more emphasis should be given to scientific, technical and vocational education, no attempt has been made to plan education in relation to the requirements of economic development. Nevertheless, the plans more or less implicitly recognize the great importance of carrying out manpower studies, and it is essential that these be undertaken before future planning, or carried out in the course of the next programme—indeed, Indonesia, Malaya and Thailand have already made a beginning in this direction. The present study, with its preliminary efforts to assess the high-level manpower implications of development tendencies and goals, and the Unesco studies on investment in education at all levels carried out for the 1965 Conference of Asian Ministers of Education, should at least indicate the magnitude of the issues involved, the urgent need for surveys at all levels, and their translation in terms of the various terminal stages of the education system. The analysis presented in the next chapter of this report is of course faced with the same lack of statistical data that prevented national planners from including over-all considerations of manpower requirements in their plans. The attempt to establish this relationship is therefore tentative, indicating quantitative targets in very approximate orders of magnitude in the main fields of planned advance.

Any closer analysis of the educational implications of these plans must await both sectoral studies of manpower needs and an examination of the social functions of education. It is already clear that heavy and increasing demands are going to be placed on middle- and high-level technical education, including agricultural education. It is, however, important to quantify this demand and relate it to projected needs in specific technological areas. A wholesale expansion of technical education in terms of increasing percentages of the secondary school population may well prove just as disastrous and more expensive than the absence of the necessary training facilities unless it is related to the balance between levels; to its flexibility in terms of allied fields; to estimates of stock, wastage, replacement and expansion projected in each area; to the establishment of effective selection procedures for technical education; and to the geographical distribution of population and industry.

5. The high-level manpower needs of development

In assessing the contribution that can be made by the various forms of higher education to the production of the skilled manpower necessary for the effective realization of the plans considered in the last chapter, it will be appreciated that these are short-term plans, and that in consequence the study will be occupied with the tactics rather than the grand strategy of planning, though tactical advance must be planned with sufficient flexibility to permit of adaptation and development as strategy moves from general concepts of improved living conditions and technological advance to quantified and defined objectives.

The actual conception of educational targets, in the sense of indicating ultimate general achievements such as universal literacy or free secondary education for all, does not require a great deal of imagination, but in practice the realization of these ends is only part of a campaign to attain a larger number of objectives, both social and economic, and advances have to be made on a broad front, since salients are very liable to be cut off. Thus the development of technical education must be so timed that the release of skilled personnel coincides with the need of their services in industry, and so designed that courses are sufficiently flexible to be adapted to other industrial requirements as the need for different types of manpower rises and falls.

The implication of this for educational planning is, of course, that priorities may have to be imposed which are not strictly educational, but based, for example, on the availability of finance in competition with other aspects of development. Thus an originally approved target figure of expenditure on education as a percentage of GNP may be lowered, without reference to educational needs, to meet contingencies such as the unforeseen needs of newly established industries. Again, to quote two examples from India, reaching forward to long-term perspective planning, a reorientation of some aspects of school education had suddenly to be planned to meet a national political emergency; and in view of competitive financial demands a decision had to be taken not to make specific provision for adult education in the Third Five-Year Plan.

However, the target, whilst indicating a direction, also serves as a reminder to the educationist that it is his duty when translating the need for different categories of manpower into terms of levels, courses, enrolments, staff, buildings and equipment, to ensure that whatever the immediate priorities, the structure of the system is still capable of being built up into the target pattern.

It is, then, the purpose of this chapter to make some estimate, in the light of the general review which has just been made of the economic situation of the region and of the existing and projected development plans of the several countries, of the needs of high-level manpower in the main fields of material and human production—agriculture, engineering, pure and applied science, medicine and teaching—and to give an indication as to whether or not these needs are being, or could be, met.

The estimates and projections provided by the study's consultant, on whose views this chapter of the report is based, 'take into account what seems actually practicable in educational expansion or economic growth, though often the targets are at the very limits of possible effort'.[1] Two limitations have to be borne in mind in the treatment of the manpower situation that follows. First, it needs to be stressed that the quantitative assessments represent 'the minimum requirements of manpower trained in modern skills to make possible sustained economic growth and modernization and to provide a gradually improving health service'.[2] Thus a distinction is drawn between what is economically necessary and what may be socially and politically desirable: only the former is considered in this chapter.

Second—and it is a typical situation in planning—the projected outputs are based on present teaching methods and organization. This is essential, since experience of and research in new techniques of teaching, in new educational aids, and the reorganization of educational systems under current discussion, have not yet reached the stage where either their success or their effect on the cost and the personnel of education can be assessed. Faced with the dilemma that any imposition of priorities in educational development on the ground of unavailability of funds may possibly impose crippling limitations on economic growth (certainly not the lowest assessment of the contribution of education to economic progress!), Professor Millikan[3] exclaims: '. . . it is surely worth making serious efforts to see whether new methods, new principles and even new gadgetry cannot be found which will make it

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1. See Hunter, Section 1.
2. ibid.
3. Max. F. Millikan, *Education for Economic Development*, p. 5 (Centre for International Studies, Massachusetts Institute of Technology, 1961).

possible to achieve the educational objectives essential to growth with inputs of resources which the underdeveloped countries can afford. This calls for radical and imaginative innovation'. It certainly does, but in the four years since Professor Millikan's appeal little positive has yet emerged from experimentation with, for example, programmed instruction, still involved in wrangles on learning theory, to indicate that a saving of money can be effected by the use of such techniques, whatever may be their value as aids to a teacher. Nevertheless, the point remains valid that a great deal of thinking and experiment is current on the use of teachers' aids, variable class size, 'sandwich type' organization, teaching by radio and television and other visual aids, and it is not unreasonable to hope that the eventual results will include a heightened productivity and efficiency, and a more effective utilization of highly trained staff.

At the moment, however, it is only necessary to appreciate that there are major changes possible in educational techniques, equipment and organization which may before long have a considerable effect upon the productivity of the systems now under review.

Detailed studies of manpower needs are necessarily specific to each country, and are based upon a not unintricate series of calculations and assumptions. For these details the reader is referred to the consultant's monograph. This chapter largely consists of a summarized review of his general report on the manpower situation of the region, and indicates what appear to be the main areas that need development or strengthening.

It will be appreciated that the figures and views given without comment or support in the pages which follow are the result of wide inquiry and close reasoning, and are often, in individual cases, subject to qualification. It was impracticable to introduce into this report more than the basic statistics, the general findings and the conclusions, of an *ad hoc* study in depth. For a detailed treatment of the argument and figures now set out, recourse must be had to the source document.[1]

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1. The problem of incorporating the consultant's findings and recommendations within this report was one of some difficulty. Clearly the report would be hopelessly incomplete if it did not contain a serious study of the provision of high-level manpower—on the other hand the basic study spreads over 145 closely printed foolscap pages. Equally clearly, whatever divergencies of opinion there might be in the matter of detail, it would be necessary to accept the consultant's methodology and general recommendations if the report were to present any appearance of homogeneity.

Fortunately, this aspect of the situation has in fact presented few difficulties: a closely reasoned and detailed correspondence on the draft of every chapter removed any major obstacles that might have interfered with general acceptance of the study.

The method finally adopted, and for this Guy Hunter, only remotely accessible in Africa, bears no responsibility, has been to draw up a summary of the study, both in its general and specific aspects, to form the main substance of this chapter.

There are, however, a number of editorial comments and interpolations to indicate major developments which have occurred since the paper was written (in Burma and Malaya, for example); to develop a point of view which seemed particularly significant educationally; or, at times, to suggest that an alternative

General findings

Guy Hunter puts forward the general thesis that over the next decade (1962-72), (a) in the main the quality of higher education should be improved and consolidated rather than its quantity increased; (b) one of the main educational targets during the period should be provision for the practical training of technicians of all types at the post-secondary level; (c) 'the development of agricultural productivity, and especially of peasant-grown food crops, is by far the highest economic need of the whole region'; and (d) the development of teacher training is the master-key to educational advance.

The essential trained manpower need, as will be expected from the analysis of the economic problems of the region, is for a wide variety of services in the rural areas, not for agricultural improvement alone, since the development of agricultural productivity depends not only on technical advance, but on the raising of the whole standard of rural living and the improvement of health, education, communication and administrative services.

Commerce, which is centred in the import-export trade in the main ports, and the network of retail distribution spreading from them, is largely international in character, and it has to a considerable extent become the preserve of the immigrant and the expatriate. It offers a wide field of profitable activity for trained manpower.

Every country has a nucleus of modern industry, but the contrast between the modern technological plants and methods of major enterprises, a large proportion of which are financed from abroad, and the backward methods of most small, locally-owned undertakings is clearly indicative of the obvious lack of technical skills. The needs here, apart from training, include the development of power supplies and communications, and the rise in purchasing power of the vast agricultural population.

Save in Malaysia and Cambodia, the human resource aspect of these problems is not the immediate supply of personnel with an upper secondary school or university education, but their quality, their distribution and their final training. Far too many students reaching the universities are ill-pre-

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position might be taken. The sub-head 'Commentary' generally indicates the beginning of such additional observations, and the views expressed under it are not directly attributable to Hunter.

In certain cases, either more recent statistical data or a re-check of figures has led to the need to revise those appearing in Hunter's study. Such revised data is included in the report's treatment of the study without comment when it does not affect the basic argument.

These and other brief interpolations will present a simple exercise in collation to readers also possessing Hunter's paper: for others it is hoped that where a marginal note does not signal an editorial comment the tenor of the passage will indicate its provenance.

pared for them, and drop-out is excessive in the extreme, thus wasting valuable places. Those who succeed are magnetized by the life of the cities and the distinction of the white shirt of the office worker and the administrator, with the result that the rural economy, despite its importance, is starved of energetic, capable, well-trained young men, though these may actually have been contributed by the countryside to the training programme. The situation, of course, is not without its complications, since in most instances service in the countryside means service with government. For example, the subsistence economy of most rural areas is incapable of supporting a doctor with cash payments, yet doctors are not notoriously addicted to government service (though in the Philippines they are reported not to be averse to it), because, like architects, engineers and dentists, they can command a high monetary salary and comparative independence in the towns.

The expansion of facilities for higher education will need to be viewed with some caution because of the limited capacity of some of the developing countries to absorb large additional numbers of highly skilled personnel before the creation of employment possibilities. Accordingly three stages of educational policy are outlined. First, the quality of the provision for higher education should be consolidated, targets being set for the minimum necessary output of high-quality graduates. At the same time the quality of secondary education should be raised to reduce high wastage rates, and measures should be taken to effect a massive increase in post-secondary technical training. These steps should take precedence over the quantitative expansion of primary education until the second stage is reached, at which the economy is adequately absorbing the educational output, when primary education should be consolidated and expanded to react effectively to the leadership generated by the first stage. Finally, as the economy gathers pace towards 'take-off' and the need for technologists and technicians begins to rise steeply, priorities should again be allotted to the upper levels of the educational system.

This view of educational response to development is not extended to Laos, Cambodia or to Malaysia. Malaysia, with the highest national *per capita* income in the region, has the lowest *per capita* university enrolment, save for Cambodia. The Malaysian figures, however, do not give the whole story. There are more Malaysians overseas than in the universities of Malaya and Singapore; and, so far as Malaya alone is concerned, a large number of students in the University of Singapore and in Nanyang University derive from Malaya. There are weaknesses in secondary education, now under wholesale reconstruction, and the language situation has made for difficulties in secondary education, but university entrance standards are high, and the expansion of university education is planned.

The reverse situation is to be seen in Burma, the Philippines, Viet-Nam and Indonesia, where improvement of the quality of secondary education is the first task of educational development, which in turn involves a reconsideration of the basis of selection for teacher training and the techniques employed in it.

There arises at this point the dilemma that the developing countries of Africa and Asia are basing their future hopes upon technological developments, that they are impatient of the slow rate of progress—which, after all, is electrifying compared with the original Western rate of advance, though, due to inordinate population growth, low in *per capita* terms in relation to present growth rates in developed countries—yet, at the same time, they do not expect this development to be made at the expense of their own traditions and way of life.

If, therefore, economic development is to take place in which the best of modern techniques are to be developed in a framework of institutions and skills close to the economic environment of the region, growing from existing patterns and skills rather than from the blanket imposition of Western organizations and practices, there must be a corresponding reaction from educational development. It will be necessary to ensure that, in the general development of education, the priorities—and priorities there must be, not only on financial grounds, but also because of the mutual repercussions of development at one level on another, and the limits of expansion at any given time imposed by problems of labour and supply at all levels—ensure an output to meet the proposed pattern of development. Such a policy, planned over a period of not more than ten years,[1] would enable future adjustments and developments to be worked out during the first planning period, and could be applied not only to new institutions but also to the existing system.

The elements of such a programme require a small but high-quality university output to plan and administer the social and economic endeavour, to produce the research workers necessary in a wide range of fields from health and agriculture to plastics, to maintain intellectual standards in the fields of international relations and scholarship, and to train the teaching force, both new entrants and those already, woefully under-trained for the most part, in service, upon whom the whole future of educational and social development—and largely economic development too—depends. Next, but probably in the present stage of development most important of all, is the development, at the post-secondary level, of a host of middle-level technicians—primary teachers, co-operative, agricultural and health officers, accountants and commercially trained personnel, largely for service in the rural areas. The emphasis here is not on secondary education—though the importance of competent preparation for university entrance must not be minimized—but rather on the training of the great majority of secondary school leavers who have had little preparation, beyond the admittedly essential basis of a general education, for applying their education to their own and their country's profit. Finally, a gradual consolidation of the primary school system will be involved together with an extensive adult education programme, to help improve the conditions of rural life.

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[1] The argument that the training of a professional requires an education of at least fifteen years, and that planning should accordingly cover at least such a span, pays little regard at all to the school population already within the system, which is already available for inclusion in any programme affecting the level or range of educational output.

PREMISES OF QUANTITATIVE FINDINGS

Quantitative findings are based upon the following premises:

1. Total high-level manpower will need to expand at a faster rate than the annual rate of national income, but the total employed labour force at a lower rate than GNP.
2. A proportion of technicians to university graduates of from 3 : 1 to 5 : 1 is a reasonable target.
3. Growth rates: high level, 1.5 to 2.0 times as fast as GNP; middle level, 2.5 to 3.0 times as fast as GNP. In general the higher ratio is taken as the over-all basis.
4. An average working life of 25 years—or 40 per cent wastage of original stock in 10 years.
5. High-level manpower is checked against total population:[1]
   Present proportions: U.S.A., 5 per cent plus; South-East Asia, 0.2 to 1 per cent plus.
   Projected proportions 1975: South-East Asia, from 0.54 (Burma) to a top figure of 2 per cent (Malaysia). These vary according to different estimates of employment opportunities based on anticipated economic growth.

MANPOWER CATEGORIES

Manpower requirements may be grouped in the following categories:[2]

I. Technologists and professionals, of whom at least 80 per cent are university level graduates.
II. Nine to ten years of schooling, including the first cycle of the secondary level, plus two or more years of education and training (technicians, radiographers, trained nurses, second-level agricultural extension staff, etc.).
III. Craftsmen, junior clerks.
IV. Unskilled labour, peasant farmers.

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[1] This check is not included in the condensed reviews which follow; and in Hunter, too, is given only for Burma, Indonesia (0.93 per cent), Malaysia (2.0 per cent), the Philippines (1.4-1.8 per cent), Thailand (1.0 per cent) and for years varying between 1970 and 1975.

[2] The terms 'Category I' and 'Category II' are employed throughout this chapter.

The findings on the high-level manpower situation of the individual countries summarized below are in the main indicative of orders of magnitude of estimated expansion required. In most cases two sets of figures are employed: (a) possible targets for the total production of Category I (professional) and Category II (sub-professional) manpower, which are based upon growth rates related to economic growth (see above) and thus cover the contribution of higher education to both social and economic sectors,[1] and (b) the estimated expansion required in four vital and easily identifiable sectors—agriculture; engineering and technology; medicine; graduate teachers for the higher forms of secondary schools. An attempt is also made to estimate the number of scientists required to support the activities of field agriculturists (3 : 1), engineers (4-5 : 1) and doctors (1 : 6). These targets, projected to 1972 or 1975, are set against such 1962 output figures as it has proved possible to obtain: information is scanty indeed as to Category II outputs, but on occasion admission figures give indirectly some indication of potential output and of available training facilities.

Reviews of individual countries

BURMA

Total output

It is estimated that the output of matriculants (taking their examination after an interval of one year after a total of nine years of schooling) before the end of the 1960's should amount to between 16,000 and 20,000 students prepared to enter some form of further education. (The total output of matriculants in 1962 was 15,000, of whom 3,500 were admitted to the university.)

Of the output during 1965-70, half is seen as proceeding to the university, half to vocational training in a very wide variety of fields. Taking the university entry as 10,000 (assuming the higher output of 20,000), 4,000 of the university entry may be expected to stay the course, the remaining 6,000, some with a two-year intermediate qualification, may be expected to join the 8,000 to 10,000 vocational trainees in Category II posts. Thus by 1972 an annual production of 4,000 graduates should be available for Category I posts. (The 1962 figure was 2,176.)

It is suggested that the most essential development is a major expansion of training facilities at the post-secondary level, which in 1964 included 720 places in the two government technical institutes, 60 places in agricultural training, and a variety of courses in subjects such as forestry, nursing and midwifery, other para-medical services, and in-service courses run by various public utilities. Five hundred places were also available at the State teacher-training colleges for middle schools.

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[1] A considerable contribution to reaching these over-all targets will be made by those students graduating abroad who return to work in their own country.

Special fields

Examining the needs of fields of major importance in more detail, the situation is:

CATEGORY I

	Agriculture and forestry	*Engineering*	*Medicine*	*Education*
Actual output 1962	35	111	166	494
Target output 1972	40	140	350	480

CATEGORY II

	Agriculture and forestry	*Engineering*	*Medicine*	*Education*
Actual output 1962	60	173	—	500
Target output 1972	100	300	—	1 500

The indications are that, apart from improving the efficiency of existing institutions, the main deficiencies are at the second category level: needs include an additional annual output of some 130 technicians, and new training colleges to provide an additional 1,000 non-graduate teachers annually for middle schools.

The suggested increase in the production of doctors, rising from 166 in 1962 to 250 a year in 1968, and to 350 a year by 1975, has already been foreseen: a second medical school is being established in Rangoon, and an increased output is now in training at Mandalay.

The target outputs are seen as providing the following stock of qualified manpower by 1975 in agriculture and medicine.

Agriculture. Graduates: field advisory and administrative staff, 300; agricultural and irrigation engineers, 100; research and animal husbandry, 100; co-operatives, credit, marketing, 100; total, 600.[1] Category II: field staff (*diplomates*), 1,500; inspectors, 300; research assistants, 500; total, 2,300.

Doctors. A stock of 5,000 doctors soon after 1975 would give a doctor/population ratio of 1 : 6,000 as against 1 : 14,000 in 1962.

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[1] As against about sixty in 1962/63.

TABLE 32. Burma: number of full-time students in institutions of higher learning by branch of study, 1963/64 and 1964/65[1] (the first academic year of university education reorganization)

Branch of study	1963/64		1964/65	
	No.	Per cent	No.	Per cent
Humanities	8 620	51.2	5 256	30.8
Education	779	4.6	1 388	8.2
Law	447	2.7	422	2.4
Social sciences	780	4.6	1 664	9.2
Natural sciences	3 685	22.2	3 974	23.3
Engineering sciences	663	3.9	1 568	9.3
Medicine	1 624	9.6	2 454	14.4
Agriculture	126	0.7	201	1.2
Forestry	45	0.3	91	0.6
Veterinary sciences	42	0.2	98	0.6
TOTAL	16 811	100.0	17 116	100.0

1. Figures supplied by the Planning Branch, Ministry of Education, Burma, January 1965.

Commentary

Since this analysis of the educational system in 1962 was made, the Union of Burma University Education Law of 1964[1] has come into operation (2 November 1964). The analysis, of course, still holds good for the situation when it was made, and indeed gains an added interest when reconsidered in the light of the present situation, though at this initial stage it would be premature to attempt any assessment of the ultimate effect of the reform.

Briefly (more detailed information is given in the country profile), an attempt has been made to re-shape education in terms of ideological needs, and the scope of university teaching has been narrowed to provide a purely vocational or professional education. Administratively the two universities of Rangoon and Mandalay and their associated colleges are now reorganized into professional institutes, and arts and science universities. The immediate effect on the various faculties is shown in Table 32 where the total number of full-time students in institutions for higher education in 1963/64 is compared with the similar figure for the new institutions in 1964/65.

The proportion of arts and science students to those enrolled in technological or professional courses has fallen from over half to less than one-third; and the most significant increase is in engineering. No details are available as to the courses of study available to the 1,124 students enrolled in the evening classes of the Peoples' Colleges in Rangoon and Mandalay: a press report indicates that these numbers were swollen to 5,000 on the opening night of the session.

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[1] See Chapter 6, p. 197.

Proposed targets

With this situation in mind, it is possible to return to Hunter and proceed with the original review.

It will be noted that the calculation of the over-all increase in Category I posts, a calculation geared in with economic growth, which covers not only the productive and educational fields, but also the civil service and other forms of administration, business management and commerce, defence, law and order and in general the social and political demands upon higher education, proposes an increase over the 1962 graduate output of nearly 2,000 annually by 1972, whereas minimum demands in the basic fields studied in more detail indicate an increase of the order of only some 200. It would appear from the announcements, rather than the present moves of the Government, that the latter target plus an additional increase in science graduates, is more likely to find favour.

At the technician level the two existing institutes, with an annual intake of 720 students for a three-year course, are only producing 133 graduates a year (149 in 1964)—the remaining 40 coming from evening classes in Rangoon. An output of an additional 127 (or 387 if a proportion of four technicians to one technologist is to be maintained), will certainly need a planned attack upon wastage, and considerable extensions to the existing institutes, or a reorganization based upon the sandwich system. The alternative of providing another institute is likely to involve a heavy capital outlay on buildings and machinery, and major staffing problems: possibly, however, long-term needs may prompt the heavier investment.

Little quantitative change is essential at the high-school level, where the present total enrolment of 100,000 should produce, if necessary, 8,000 to 10,000 university entrants. The requirement here is for a more selective entry to high school education based upon a trebled middle-school enrolment, and a qualitative improvement at the high-school level. Such a policy is, however, still likely to involve some expansion of high school facilities through pressure from below, providing for a total enrolment of 150,000 by 1972. The major capital investment would be in middle-school buildings and training facilities for an additional 1,000 teachers per annum, presumably four additional colleges with an annual enrolment of 250 each. The recurrent cost of salaries for the ensuing graduates will be extremely heavy.

The proposals for Category II training clearly envisage a wide extension of existing facilities, particularly in the fields of agriculture and its allied industries, and a substitution of training for empirical progress from the artisan level. It will also be necessary to ensure that the development of training for agricultural extension services is matched by an appropriate expansion of these services.

Finally, it is also suggested by Hunter that additional educational effort should be spent in lengthening the two-year high school plus one year pre-university course to at least four years of study, as a total of 9-10 years schooling appears too short to achieve adequate quality for university entrance. The resultant slowing down of output would have no serious consequences as employment opportunities would also increase slowly.

THAILAND

Total output

Thailand is seen as a country where in the past the social and political demands upon the second and third levels of the education system far exceeded the provision needed for continued economic progress—a situation which appears to have led to some confusion in the interpretation of projections of educational growth.

Hunter, on the basis of 1960 Census occupational data, estimates an existing stock, in 1960, of 30,000 posts in Category I and 70,000 in Category II, and projects, on the basis of 60 per cent economic growth and 120 and 180 per cent growths in Categories I and II, the need for an average annual output between 1960 and 1970 of 4,800 Category I personnel and 15,400 Category II personnel.

These figures are then considered in relation to projections on various assumptions made by the Thai-USOM Task Force,[1] from which the Unesco Planning Mission preferred the forecasts requiring annual average outputs of 2,556 and 42,362 for 1960/66, and an over-all annual average for the whole period 1960/80 of 3,459 and 44,875.

There are major discrepancies between the Hunter and Thai-USOM figures for both categories; and in a closely reasoned argument Hunter suggests that the production of Category II personnel has been very considerably over-estimated by the Thai-USOM group, possibly through the application of figures based upon the needs of the heavily industrialized Bangkok-Thonburi area to the whole of an overwhelmingly agricultural country. It is also argued that, in estimating the output of graduates, it is reasonable to assume that at least one-third of the leavers in the final secondary-school year will enter the university (i.e., 10,000 out of 30,000 in 1970, of whom 60 per cent may be expected to graduate, giving a total output of 6,000).

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[1] *Preliminary Assessment of Education and Human Resources in Thailand*, prepared for the Joint Thai-USOM Human Resources Study (Bangkok, 1963).

The final recommendation (of the output necessary to maintain economic progress) is an annual average output of 4,200 Category I and 15,400 Category II personnel up to 1970, rising between 1970 and 1975 to 7,000 and 31,000. Of the 7,000 Category I group, 5,500 might be expected to be university graduates (as against 2,899 in 1962), and 1,500 graduates from technical institutes.

This would require average annual outputs from the secondary schools of a little over 20,000 up to 1970, and 40,000 for the next five years. Such provision appears to be within the compass of the present plans of the Ministry of Education, which, though the 1961/62 enrolment in grade 12 (the final secondary year) was only 12,421, anticipated 20,000 secondary graduates in 1963 and over 30,000 by 1970/71. A further source of recruitment is the output of the higher technical schools and the technical institutes, with total enrolments and graduates in 1961/62 of 29,327 and 8,796 higher (grades 11-13), and 4,891 and 1,673 technical (grades 14-15).

The total number of university graduates in 1962 was 2,899, not counting 953 three-year *diplomates*. Thus development of the Bangkok universities, and the output from the new universities at Chiengmai and Khonkaen would together have to produce an additional 2,600 graduates by 1970/75, which, with a pass/fail ratio of 3 : 2, would entail an additional annual enrolment of over 4,300 for which 760 places should by 1970 be available at the new institutions, with subsequent further expansion. This is in line with the estimated total entry of 10,000 in 1970; but if the failure or drop-out rate could be lowered—by no means an impossible partial alternative—a smaller enrolment could of course still produce a sufficient number of graduates.

Special requirements

Agriculture. The output of Kasetsart University already provides twice the number of graduate and nearly four times the number of diploma-level personnel needed to strengthen and maintain what would appear to be well-staffed agricultural advisory, extension and research services. The output will now be increased from Chiengmai and, later, from Khonkaen.

Despite this apparently more than satisfactory position, there is an impression among a number of observers that the services offered are not altogether effective—a situation ascribed in part to the theoretical nature of the training at present given in a university situated so near to Bangkok as to be largely divorced from the life and problems of the workers in the country-side; in part to a lack of equipment for field staff; in part to the confusion caused, particularly in research programmes, by the separate systems set up by the Rice and Irrigation Departments. Undoubtedly the situation will be improved when the northern universities with their very practical training programmes come into full operation. For the rest, the problems are of training and equipment, not of numbers, and the opportunity for a major re-appraisal of the whole approach to the development of the country-side seems to present itself.

Engineering. It is suggested that the output of engineers from Chulalongkorn should be stabilized at 250 (in 1962, 234 degrees were awarded); that the annual production of 30 irrigation engineers at Kasetsart should be doubled, but the training diversified to cover all types of agricultural engineering; that a full Faculty of Engineering at Khonkaen should produce 100 graduates annually by 1970, and that Chiengmai should make a more limited contribution of 40. This total annual output would, if reached by 1970, produce a stock, in 1975, of just under 5,000, which would then rise by 250 per annum after allowing for wastage. This stock can be supplemented by good quality sub-professional engineers from the higher technical institutes, and there should also be a steady flow of scientists and engineers returning from graduate or post-graduate study overseas. Two hundred and two students on Government scholarships were studying abroad in the technological fields in 1963. Finally, there will be a steady output, small in numbers but of high quality, from the SEATO Graduate School of Engineering.

Science. It is stressed than an annual output of 2,000 graduates from the science faculties is needed to support the work of specialists in agriculture, medicine and industry: the calculation is based upon the premise that there should be at least three scientists behind every agricultural field officer, and up to four to five physical scientists behind every engineer and industrial chemist for the whole range of sciences underlying the more industrialized sector and for teaching.[1]

The only existing science faculty is at Chulalongkorn University, which offers, after admission through a highly competitive examination, three-year diploma and five-year degree courses to students from the science sides of secondary schools. The total number of graduates in science in 1961 was 105, in 1962, 165. This disastrously low figure is to a certain extent redeemed by the addition of the diploma students, 250 in 1961, 130 in 1962. Certainly the *diplomates,* after a teacher-training course, would be invaluable as teachers of science in secondary schools.

Paradoxically, the inadequacy of the graduate output may be in part due to the heavy pressure on the science sides of the final two years in the secondary schools, where 75 per cent of the students opt to study science with a view to applied, and not pure science, as a career. This pressure results in the overloading of staff and classes, and imposes an impossible strain upon poor and inadequate equipment and laboratories. Clearly it is necessary to stabilize this situation before the extension of university provision is undertaken.[1]

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[1] This position is far from uncontroversial, and approximated only in the United Kingdom, where 64 per cent of the first degrees taken in science and technology are in the sciences; in other developed countries this percentage ranges between 32 (Germany) and 52 (France).

Medicine. The distribution of the 2,500 doctors estimated to be practising in Thailand in 1961 shows a doctor/population ratio ranging from 1 : 1,100 in Bangkok to 1 : 50,000 in the north-east: a similar disproportion may be observed between Manila and the rest of the Philippines. Comment has already been made on the inability of rural populations to support professionals such as doctors with cash payments, and the unwillingness of professional men to enter government service, which appears to be the only solution to the problem until co-operative insurance schemes develop to offer a sophisticated alternative which at the moment lies far beyond the capacity of local co-operatives and their officers.

The output of medical graduates (doctors only) in 1960 was about 200: it had risen to 250 by 1963, and Thai-USOM projections give outputs rising from 375 in 1975 to 450 in 1980 to produce ratios of 1 : 9,400 in 1970, 1 : 8,900 in 1975 and 1 : 8,700 in 1980. It is suggested that this is a very moderate rate of progress, and that it would be possible to reach a ratio of 1 : 7,000[2] (the present ratio in Malaya) in 1975 by an average output of 363 per annum, involving an actual output of over 500 per annum in the last five years. Were such a target adopted, the present provision in Bangkok, whether reorganized or on its present basis, together with the output from the new school at Chiengmai, would probably be inadequate, and the third medical school in Bangkok, receiving its first 60 students on a premedical course in July 1965, will certainly be necessary.

Teachers. After a detailed consideration of a number of proposed alternative targets, a reasoned suggestion is offered, based upon intermediate growth projections for the school population, which may be compared with minimum and maximum projections derived by the study from calculations provided by the Unesco Planning Mission (see Table 33).

Clearly the compromise here developed by Hunter, in addition to being based upon intermediate school population growth figures, also involves a considerable reduction in the number of graduate teachers to be employed in the lower classes of secondary schools (from 50 to 30 per cent).

It does not appear that an output of 750 graduate teachers by 1970 would offer particular difficulty, and even the non-graduate figures do not indicate an abnormal expansion of the provincial training colleges.

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[1] The situation is treated in some detail in the country profile.

[2] The Thai Six-Year Plan, 1961-66, starting with a higher stock estimate, proposed a target of 1 : 6,000 to be reached by 1966.

TABLE 33. Thailand: estimates of required annual output of teachers, by qualification, 1970

Qualification	Total years of study	Output 1961	1970 targets		
			Based on Unesco minimum projection	Based on Unesco maximum projection	Hunter
Degree	16	481[1]	1 040	1 970	750
Higher Certificate or Diploma	14	1 632	1 640	2 960	2 500
Certificate	12	5 695	3 380	7 820	7 000
TOTALS		7 808	6 060	12 750	10 250

[1] This is actually the 1960 figure, though quoted by Hunter for 1961. The figures for graduates produced by the College of Education alone for 1962 and 1963/64 were 325 and 665 (including in-service teachers as well as 487 full-time students).

Conclusion

The essentials of educational development are seen as 'a considerable deepening of the quality of education, a far greater emphasis on science, a wider application of practical training, and a wider distribution of the educated to rural areas'. In consequence the period 1961/70 is regarded as a time for consolidation to be followed by more rapid growth in the next decade. In their most condensed form, the suggested targets for average annual output are:

	1960/70	*1970/75*
Universities (80 per cent of Category I posts)[1]	3 600	5 500
Secondary schools		
(i) Category II posts[2]	15 000	31 000
(ii) University entrants	6 000	10 000
TOTAL	21 000	41 000

The output of the universities in 1962 is then compared with the projected output of 1975, which has been designed with a heavy emphasis on pure science and a remarkably low output in agriculture (see Table 34).

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[1] The balance is to be met largely by graduates of technical institutes, of whom there were nearly 1,700 in 1961.

[2] Much of this requirement would of course be met by higher vocational graduates (grade 13), of whom there were nearly 8,800 in 1961, in comparison with a general secondary grade 12 enrolment in the same year of 12,421 of whom only about 60 per cent were expected to pass, i.e., about 7,500.

Table 34. Graduates per annum: 1962 output and 1975 target

Field of study	Actual 1962		Target 1975
	Graduates	*Diplomates*[1]	Graduates only
Sciences (supporting agriculture, medicine, industry)	165	(254)[2]	2 000[3]
Arts, including social sciences	1 651	171	2 000
Medicine (doctors)	392	—	500
Agriculture, veterinary science, forestry, irrigation, fisheries	241	333	100
Engineering, all types	234	—	450
Education	539	. . .	750
Total	3 222		5 800

. . . = Data not available.

[1] Three-year university courses.

[2] The figure of 254 covers *diplomates* in both the sciences and architecture.

[3] At the other extreme, Thai Government estimates place science graduate outputs by 1980 at only 450 per year.

Commentary

Thai education has recently been the theme of a series of studies from Sir Charles Darwin's report to Unesco on *Science in Thailand, with Notes on Universities in Thailand,* compiled in 1954, to papers by American university consultants (Indiana, Texas, and Wayne State Universities), by the United States Operations Mission, the Unesco Planning Mission, the World Bank, and the work of individual consultants, such as F. G. Nichols (*A Proposal for the Development of Scientific Research in Thailand*) and C. F. Bentley and D. J. Rohner, who reported for FAO and Unesco on the Khonkaen project. Amidst the welter of statistics, none of which seem either to present quite the same data, to exist in an unbroken series, or to be compiled from completely identifiable sources, it is possible to distinguish three main themes: a society in which higher education is greatly sought after, not always for the purpose of furthering a career; the isolation of the sophisticated and industrialized Bangkok-Thonburi complex from the remainder of agricultural Thailand, coupled with the difficulty experienced by existing ministries and organizations in dealing adequately with the problems of developing the rural areas, largely through divided interests and unco-ordinated policies; and finally the dearth of scientists and mathematicians at a time when scientific research applied to development should be making considerable headway.

The first theme serves as yet another warning that the provision of higher education facilities geared solely to economic development will not satisfy the demands of Thai society; the second is a matter of reorganization rather than expansion. The comparative poverty of the provision for science teaching must remain a matter of concern to those responsible for higher education: it is a problem to which the two new universities do not offer a complete solution. Their total enrolment will only reach 2,600 by 1975, which implies a graduate production of between 400 and 500, not all of whom will of course be scientists, though there is to be a science faculty at Chiengmai and basic courses at Khonkaen, where the bias will again be toward applied science.

Hunter's estimated requirement is for 2,000 scientists a year in the fields of mathematics, statistics, physics, chemistry, geology, and the biological sciences. His case is that 'even a glance at the range of technology associated with modern industry, a modernized agriculture, and medicine, all of which require a first degree[1] in mathematics, physics, chemistry or the range of biological sciences, will be enough to show that a ratio of at least three to one between the teaching, research and specialist force and the general practitioner is needed. I emphasize this point because none of the projections suggested a figure of output from the science faculties as such which is in scale with the proposals for engineers, doctors and field agriculturists. A proportion of 50 : 50 science/arts[2] is probably too low on the science side'.[3]

The Ministry's estimated requirement for 1980 is an output of 450 scientists. It is difficult not to think that a solution must be sought somewhere between these two extremes.

In the meantime the College of Education is developing part-time as well as full-time training courses for science teachers, and since even as an emergency measure it would not appear wise to isolate science teaching from other educational fields, it might seem feasible to consider the introduction of pure as well as applied science teaching at the higher technical institutes rather than the development of new independent units for science teaching.

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[1] By this, Hunter obviously means a basic preparatory qualification, not a full university degree.

[2] The proportion of first degrees in scientific disciplines (including natural sciences, engineering and agriculture) to all first degrees in European OECD countries averaged only 33 per cent in 1959 (ranging, with the exception of Austria, from 13 to 48 per cent, with natural sciences alone accounting for 6 to 25 per cent) and this proportion is expected to increase to 45 per cent in 1970. See: *Resources of Scientific and Technical Personnel in the OECD Area*, p. 61-3 (Paris, OECD, 1963).

[3] An elaborate econometric study of the balance between science and technological output and the output from other faculties, together with factors affecting the balance in relation to African university development, is to be found in pages 160-9 of *The Development of Higher Education in Africa* ... (Paris, Unesco, 1963). Three alternative estimated ratios science/technology : others are 15 : 41; 11 : 46; 13 : 48.

MALAYSIA

Malaya

The study is based upon four main sectors; agriculture, industry, health and education. The necessity for a specialized study of the manpower requirements of the construction industry is also indicated.[1]

Agriculture. The main problems are: (a) an increased productivity of rubber to meet falling prices with lower unit production costs; and (b) the development of new export crops and of food crops for home consumption,[2] both of which necessitate the expansion of the training and output of field and research staff.

Proposals before Government for staff expansion within a period of five years envisaged a growth of the Category I establishment from 63 to 237[3]—to which must be added the present establishment of Category I personnel in the Rubber Research Institute (101) and the Forestry, Veterinary and Fishery services, altogether another 147, giving a total Category I establishment of 384. Category II posts were to be increased from 155 to 660, in addition to 80 posts outside the department. It is suggested that since these establishments, which certainly seem generous, cannot be attained within the term of the Five-Year Plan from local resources, it would, subject to review, be more practical to think in terms of an establishment, in the early 1970's of:

	Category I		*Category II*	
Field staff	40		260	
Research staff	120	160	300	560
Rubber research	120		60	
Others and teaching	70	190	100	160
		350		720

The annual levels of output which would maintain this stock, at 5 per cent per annum wastage rates, are 17 for Category I and 36 for Category II; but taking account of the need to replace expatriate staff and to allow for additional recruitment to the schemes of the Federal Land Development Authority, at the rate of 12 new posts per year, these required outputs may be raised to 35 and 50 respectively. Furthermore, to reach targets more quickly, output for Category II may be set at 100 by 1968/69, falling back to 50 by

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[1] This is now being planned (January 1965).

[2] In the early 1960's, food accounted for well over 20 per cent of total imports.

[3] It is understood that in the current draft the proposals are even more generous.

1975 plus 50 improved Category III output; and to support government and field staff with researchers and teachers additional outputs of science and higher-degree graduates could reasonably be set at 80 per annum by 1970 and 115 per annum by 1975:

		1970	*1975*
University—Category I:			
(a) Faculty of Agriculture	first degree	25-30	35
	post-graduate	10	15
(b) Faculty of Science—agricultural bias[1]		70	100
Serdang Agricultural College	Category II	100	50
	Category III		50

The targets are within range of the two existing institutions provided the college is expanded adequately to full capacity, the policy of offering contracts to expatriates, particularly in rubber research, is not abruptly terminated, and the scholarship programmes for local personnel are enlarged. The suggested Science Faculty output of graduates with an agricultural bias would, however, require special new measures and additional facilities—in 1962 there was a total of only 84 science graduates.

Industry and commerce

(a) Engineers—Category I. According to the 1963 Survey of Key Occupations, the stock of engineers was 1,977, of whom a high proportion were probably expatriates. The output of the University at Kuala Lumpur is estimated to rise to about 100 in 1968, which would maintain a stock of 2,500. By 1975, however, to meet needs this stock should, as far as possible, be raised to 4,000; and since only some twenty Category I engineers are likely to be produced annually by the Technical College, a further university output of 80 per annum is a minimum target. The maximum output of the Faculty at Kuala Lumpur (which in 1962 produced 17) is not likely to exceed 150, and Hunter feels that it is essential to establish a second school of engineering, particularly if assistance is to be given to the needs of Sarawak and Sabah. It is possible that such a school might be established as the first stage in the up-grading of the status of the Kuala Lumpur Technical College. On the other hand, a case can be made for the inclusion of engineering in the proposed new university at Penang.

(b) Technicians—Category II. The output of the Technical College in Kuala Lumpur, together with departmental training schemes, would at most produce only about half of the technicians of all types needed by the early 1970's, and it is evident that an additional technical institute is required.[1] Whilst establishing the second institute at Penang or Ipoh, more up-grading of artisans through technical classes could be organized in co-operation with industry. It also seems feasible to suggest that the Ministry of Labour Training Centre in Kuala Lumpur might undertake some training at the second as well as at the third level, particularly in evening classes. Even so to reach and maintain a technician/engineer ratio of 3 : 1, requiring an annual output of at least 600, it might well be necessary to consider setting up a third technical college.

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[1] The outputs under (a) and (b) would apparently be additional to the others required to reach and maintain the divisional stocks proposed by the Government. The total suggested output of 150 graduates by 1975 for agricultural manpower compares interestingly with only 100 by the same year for Thailand, which has nearly four times the population of Malaya, or nearly three times that of the whole of Malaysia.

Commerce. With the exception of the small Rural Industries Development Association College, with an enrolment in 1962 of 154, there was until recently no training available in Malaya for accountants, auditors, company secretaries and bank officers in Category I, or for clerks, bookkeepers, etc., in Category II. A 1963 survey lists 821 Category I and 1,786 Category II personnel; but a fully coverage of all sectors of commercial activity may well show that these numbers cover only one-fourth and one-tenth of the respective categories. In addition to expanded university provision of courses in business and public administration, there also seems to be a specific need for a commercial college with small specialized courses in, for example, accountancy, and a wide variety of day-release and evening courses. Courses in management are being successfully undertaken and developed by the National Productivity Centre at Petaling Jaya, a satellite township of Kuala Lumpur, with assistance from the International Labour Organisation, and the time does not yet seem ripe for the establishment of a university department of business administration.[2]

Health. In 1959, the last year for which figures are available, there were 471 doctors in government service and 556 in private practice; and there was then one doctor to 7,000 of population. At this time Malaya was dependent upon the output of the Medical Faculty of the University of Singapore for locally trained doctors; in 1963, however, the University at Kuala Lumpur admitted its first batch of medical students, and some 64 are expected to graduate in 1969. By 1973 it is hoped to produce about 120 graduates per annum.

The output of medical personnel is considered in relation to Malaysia as a whole, which by 1975 is estimated to have a total population of 15.6 million. To achieve a ratio of one doctor to 5,000 of this population a force of over 3,000 doctors would be required, while the total stock in 1960 was 2,000. The required annual average output of doctors would be 150; and since soon after 1970 the combined output of Singapore and Kuala Lumpur should reach 200 per annum, this provision, together with increases in recruitment of doctors from abroad for the private sector, should be adequate for minimum requirements. Further attempts to increase the ratio—to say 1 : 2,500 by 1975 (6,000 doctors, implying an output of 340 per annum)—would probably entail the creation of a third medical school.

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[1] This may prove an important factor in deciding to site the establishment of the second school of engineering as a bifurcation of the senior section of the Kuala Lumpur Technical College, which would ultimately, like the Singapore Polytechnic, develop into a technological university.

[2] In fact the establishment of such a division within the Department of Economics has now (1965) been agreed.

Teachers. The situation is a complex one since, in 1964,[1] a considerable reform was suddenly effected whereby the selective barrier for secondary education was raised to permit of nine years of comprehensive education, after which a selective process leads to two further years in various types of upper secondary classes, followed by a further two years of pre-university education or by technical studies which in three years lead to a diploma.

The consequential review of the teacher-training system does not seem to cover more than the first nine-year stage (for which a two-year training course with a School Certificate entrance qualification (grade 11) is the modal form of training). Apart from a crash programme for the initial training of teachers for the new comprehensive classes, in which the now non-selective intake is likely to be greatly increased, plans are under consideration which would ultimately provide an output of 3,840 teachers a year, which it is estimated will deal with the new organization.

This revision of the planning of the first nine years of school life, which is accompanied by a pooling of the present training college system to permit of the training of specialist teachers in similarly oriented colleges, does not make specific provision for the staffing of forms IV, V and VI (1 and 2)—i.e., grades 10-13.

It was calculated that to staff these forms with graduate teachers in 1963 would require a stock of 1,600, of whom only 772 were available. On projections made from that year, the future requirements of such a graduate force would be 2,400 in 1970 and over 3,000 in 1975—requiring an annual output of 200 graduate teachers. This, however, is likely to prove a considerable under-estimate if the expansion of the lower secondary schools envisaged by the comprehensive measure is realized.

At present the university does not provide undergraduate courses in education,[2] but the new graduate School of Education offers a one-year profes-

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1. This development took place subsequent to the publication of the Hunter report, and this section includes editorial comment.
2. In view of the pressing need for graduate teachers and the relatively high standard of university entrants, a possible alternative would be to design and offer a three-year B.Ed. course which would shorten the preparatory period by one year, but should be able to cover the content needed by all save the sixth-form teachers, who might still opt for a post-graduate course (a salary incentive would be necessary). It is at the moment a striking fact that whereas form III in Malaya would normally be

sional course, which in 1963 enrolled 25 arts and 9 science graduates, a total of 34 of whom 30 were awarded diplomas. In 1964 an initial enrolment of 88 stabilized at 83; and in the next academic year an enrolment of 150 was expected. After initial depredations for administrators and training college staff, it is likely that almost the whole output will be available for secondary teaching. The school is also preparing to offer higher and research degrees, for which considerable material provision is being made. Further expansion, or a second school in the new university (referred to above), will be necessary if the provision of graduate teachers is to extend further down in the secondary schools, as it should; and specific provision for the training of teachers of technical subjects is needed.

Teacher-training policy and its execution appears to be initiated by a series of *ad hoc* committees on which teacher representatives are scarcely conspicuous. The proposal to undertake part of the crash programme for comprehensive teacher training by a combination of theoretical study and what amounts to sixth form supply teaching, whatever its merits as a form of training, should certainly bring about a closer relationship between a number of schools and the training colleges—a relationship which should be even more fruitful if the staff and facilities of the School of Education become closely linked with all aspects and stages of the training programmes.

High-level manpower—the general position. After discussing a survey of high-level manpower initiated by the Government of the Federation in 1963, which is compared with the occupational data gathered from the 1957 Census, and with his own calculations, Hunter, on the basis of estimated 1963 stocks of 16,000 Category I and 60,000 Category II, suggests 1970 targets of 23,000 (I) and 105,000 (II), with annual average outputs of 1,600 and 9,000 over a seven-year period, roughly doubling the total 1957 stock as shown by the census. Subsequent outputs in the 1970's would need to rise to 2,000 a year to maintain and increase Category I and 12,000 a year for Category II.

Ministry of Education estimates for enrolments in form V were 20,900 in 1967, 26,800 in 1972, and 39,900 in 1977—these only in assisted schools and before consideration of the new comprehensive policy. On the assumption that the 50 per cent School Certificate failure rate would drop by 1970

staffed by a teacher with a School Certificate (grade 11) plus two years' college training, its pupils entering form IV a month or two later might well encounter a teacher with two additional years' schooling to H.S.C. standard (grade 13) plus four years at the university. It is a curiously graded transition from adolescence to maturity.

It may be objected that a B.Ed. course would involve too much 'service teaching' —an unpopular activity—from departments responsible for the content courses of this degree, or that the School of Education would lose its status as a purely post-graduate autonomous unit of the university. Neither of these objections need be taken seriously, and the interdisciplinary co-operation involved is surely in the best interests of university teaching (see Chapter 8, p. 248-57).

TABLE 35. Growth of university enrolments in Malaya

Year	Form V	School Certificate passes	To teacher and technical training	To form VI	University entry
1965	16 000	8 000	5 750	2 250	
1966					
1967	20 900	10 500	7 875	2 625	1 500
1968	21 500	11 000	8 250	2 750	1 800
1969					
1970	24 000	14 000	10 500	3 500	2 000
1971					
1972	26 800	16 000	12 000	4 000	2 750
1973					
1974					3 000 plus

to about 40 per cent, and that 25 per cent of the successful candidates would enter form VI, there appears to be no difficulty about the provision of university entrants. Hunter gives the sequence shown in Table 35.

One estimate, located in an honours degree thesis submitted to the Economics Department of the University of Malaya,[1] projects a total enrolment of about 4,000 and an output of 800 graduates in 1968. It is clear that at this rate university admissions will fall far behind the H.S.C. output, and that if the average graduate targets for 1963-70 and the 1970's are to be achieved, additional university facilities will be required. It is therefore encouraging to note that a committee has been at work preparing a case for the establishment of a new university at Penang, and that in 1965 steps have been taken to acquire a suitable site.

The rough model (Table 36) gives some indication of Hunter's proposed development based upon the establishment of one new university or university college in 1967, and a second new college in 1971-72. (The timetabling may of course have to be delayed.)

Singapore[2]

The chief internal economic problem of Singapore is to provide employment for its rapidly growing population (1,714,000 in 1962, 2,183,000 in 1970, and 2,320,000 in 1972—lower United Nations projection, excluding immigra-

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[1] Doh Joon Sue, *The Estimated Student Population of the University of Malaya, 1962-1968* (Kuala Lumpur, 1962).

[2] Since Hunter's study was completed long before the separation of Singapore from the Federation it has seemed best not to rearrange or adjust this section of the report.

TABLE 36. Model of possible university development in Malaya[1]

Year	Intake				Total student body	Output
	Kuala Lumpur	First new university or college	Second new university or college	Total		
1967	1 200	300	—	1 500	—	—
1970	1 500	500	—	2 000	6 250	1 250
1972	1 800	600	300	2 700	8 000	—
1975	1 800	600	500	2 900	10 000	2 500

[1] Two qualifications need to be made with regard to this model. First, with admissions reaching only 1,500 in 1967, an output of 1,250 in 1970 assumes that over 80 per cent would successfully complete studies for a first degree within three years, since repeaters from previous years may be regarded as more or less counter-balanced by a similar proportion of repeaters for the 1967 entry. The same assumption applies to the 1972 input of 2,700 and the 1975 output of 2,500. Since the minimum period of study for science honours, engineering and agriculture degrees is four years and for medicine six years, and since with rapid expansion lower pass rates may prevail, it may be necessary to revise expectations in terms of somewhat lower outputs of which a significant proportion would become available only one to three years after the tabulated dates. Second, even if an output of 1,250 were reached by 1970, the average for 1963-70 cannot possibly reach 1,600; it is more likely to be in the neighbourhood of 850, producing a 1970 stock of around 18,000 rather than 23,000. On the other hand, if a target of 1,250 for 1970 can be followed up with one rising to 2,500 by 1975 (a doubling which may be feasible only with larger admission targets in relevant preceding years) then a good part of the shortfall could be made up in the 1970's.

tion).[1] This involves industrial development to supplement, and possibly to supplant, the entrepôt activities of a free port. A major success has already been attained in the development of the industrial Jurong Estate (though competition from the light industrial development of Petaling Jaya, a satellite of Kuala Lumpur, has to be reckoned with).

Based on the 1957 Census figures, doubling an economic growth rate of 45 per cent for Category I, and trebling it for Category II (i.e., by 90 and 135 per cent respectively), an annual average output for the decade 1957-67 of 1,430 Category I and 6,125 Category II personnel is projected. The same growth rates over the next five years to 1972 would require increased annual average outputs of 2,740 and 14,500.

At current rates of output, only a limited proportion of the Category I requirement could be provided by Singapore and Nanyang Universities and the Polytechnic (professional courses) augmented by the considerable number of graduates returning from education or training overseas. Hunter, working on output figures for 1961 of 376 for Singapore University and 344 for Nanyang University, a total of 720, considered that it was reasonable to anticipate a total contribution of 8,000 graduates to the target of 14,300 for 1957-67, i.e., only 56 per cent. It seems, however, that even this estimate may be unduly optimistic, since it takes no account of the students recruited from Malaya, Sabah, Sarawak, Brunei, Thailand and Taiwan. A recent official report[1] gives the total number of graduates in 1961 as 317 (not 376, and excluding 20 B.Sc. students remaining to take an honours degree) and 344 from Nanyang, but of these only 107 and 143 respectively were Singapore residents, thus yielding a true output, not of 720, but of 250. Even though the proportion of Singapore students is rising since the establishment of the University of Malaya in Kuala Lumpur, the number of those still coming from external sources is likely to remain high. The report gives the total projected output for the decade 1961-70 as:

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[1] This assumes a natural population growth of 3.3 per cent per annum during 1960-65 (to which increase due to immigration could add up to 0.9 per cent per annum). Recently estimated actual total population increase between 1960 and 1963, however, was only 2.5 per cent per annum. On this basis, with an actual figure of 1,755,000 for 1962, estimates for 1970 and 1972 would be slightly lower and still include immigrant population: 2,141,000 and 2,247,000 respectively.

	Singapore graduates	*Others*	*Total output*
Singapore University	3 142	1 291	4 433
Nanyang University	2 196	2 382	4 578
TOTAL	5 338	3 673	9 011

For this slightly later decade the total output compares very well with Hunter's forecast, but the projected output of 5,338 graduates of Singapore origin accounts for only a little over one-third of the required total of 14,300. Hunter also hopes for an annual output in 1972 of 2,000 from the two universities and the Polytechnic, assuming that the enrolment at Singapore University will have risen to 5,000, and that the other enrolments will have similarly increased. He sees this output as falling short of the annual 1967-72 target by 700; but this assumes that the stock target for 1967 will have been met, so that given the shortfall for this period, by 1972 output will be 8,725 behind the target stock or an average of 1,745 short in yearly terms. Furthermore, Hunter projects a total university output in 1972 of 1,482, of whom 910 would be of Singapore origin. The output from the Polytechnic is valuable in quality, but still numerically limited—professionals and technicians graduating in 1961, 1962 and 1963 numbered 30 and 56, 74 and 71, 102 and 122 respectively. Proposals are on foot to increase the total student population at the Polytechnic from 2,400 to 4,000, including 2,000 full-time students in the various grades, when the present institution will bifurcate into a technological university and a technical college. This will certainly increase the graduate output, which is projected as 106 in 1967/68. In addition, Hunter also qualifies his projected requirements, (a) by suggesting a lower total stock target for Category I and II of 125,000 by 1972, and (b) since this would form over 5 per cent of the Singapore population, proposing that this high-level manpower should be seen not only in relation to Singapore but as shared with the whole economy of Malaysia.

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[1] *Commission of Inquiry into Education, Singapore, Final Report* (Singapore, Government Printer, 1964. Cmd. 8).

In 1960 it was calculated that there were 1,300 students from Singapore in Australia, and between 5,700 and 7,000 from Singapore and Malaya in the United Kingdom, New Zealand and the United States. Despite reinforcements from these sources and the possible future output of the Chinese Ngee Ann College, not yet officially recognized, it seems unlikely that the graduate output of the reorganized Polytechnic will make it possible to bridge the gaps; and whilst developments in Malaya may ease the pressure for arts, medical and agricultural graduates, a second technical university may be needed to meet the requirements of expanding industry in Singapore and Eastern Malaysia. Thought will have to be given to this before 1970.

For the production of potential Category II personnel, a secondary school enrolment in 1961 of 67,834 (including vocational and post-primary or senior schools) included 9,841 candidates for the Overseas School Certificate examination or its local equivalent, of whom 4,659 passed: a further 4,308 candidates, of whom 1,642 passed, sat for the Chinese S.M. 3 (grade 12) examination, then of a lower category, but now brought into equivalence with the English-stream standard. It would therefore seem that Hunter's desired output of over 6,000 School Certificate passes will be easily exceeded by 1967, when the total secondary enrolment will, it is estimated, have risen to some 139,380, more than doubling the 1961 figure. The increase in School Certificate passes while of course not proportional will be substantial, and an output of 10,000 per annum does not seem unreasonable; though whether this can be further increased to reach an average annual output of 14,500 during 1967-72 appears doubtful. Hunter accordingly suggests a lower target stock of 100,000 Category II by 1972, which would require a feasible annual average output of only 7,000.

Health services. The pressure on the output of doctors has been relieved by the creation of a medical school in the University at Kuala Lumpur, and the problem is not so much one of training doctors for Singapore—where the comparatively low ratio (for the region) of 1 : 2,400 obtains—as of providing training facilities for Sabah and Sarawak. This will impose a considerable strain on the two existing schools, but the expense of a third would be formidable.

Industry. The future of Singapore depends upon industrial development.

Following a report[1] of major significance, there are now six secondary technical schools with accommodation for 10,000 pupils, and five vocational schools accommodating another 10,000. The commission recommended two-year courses, with the possibility of a further two years in a vocational institute. The 1963 Commission,[2] however, felt the matter to be of sufficient importance to justify exceeding its terms of reference, and has pleaded for an extension of both courses to three years. (One vocational school, the old Balestier Road Trade School, has become a vocational institute, and has taken over the artisan classes of the Polytechnic.) It is notable that both commissions were deeply concerned with the educational as well as the training functions of technical education, and with the necessity for lateral transfer throughout the system. The ground is being well prepared for the expansion of technical education for the professional and technical levels, and the relationship between what will be the Technical University and the University of Singapore has already been acknowledged by the appointment of the principal of the Polytechnic to the University Senate, and an interim arrangement whereby the university will for the time being grant degrees to properly qualified professional graduates from the Polytechnic. Further development would seem to lie both in an expansion of technological education at the third level and a wide development of science teaching at both the Technical University and the University of Singapore.

Teachers. As everywhere, the supply of teachers presents a considerable problem,[3] particularly in all sections of the secondary field, where enrolment has increased by 133 per cent between the years 1957 and 1963, but the supply of teachers has grown by only 97 per cent, and this largely by recourse to in-service training.

Factors to account for the situation are the opening-up of more remunerative opportunities in the Civil Service, largely due to the policy of Malayanization, the better salaries and prospects offered by the rapidly expanding commercial sector, and the demand for more university staff: this is all reflected in the fact that the School of Education in the university is working at less than half its capacity. The situation is particularly acute in relation to the supply of teachers of technical and technological subjects, and possibly the future technical university should consider establishing its own school of technical education, though this should clearly not work in isolation, but as one component of a graduate teacher-training complex.

The State seeks an annual recruitment of 250-300 arts and science graduates to the School of Education between 1964 and 1970: for 1964 the estimated output of diploma graduates from the school was only a little over

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[1] *Report of the Commission of Inquiry into Vocational and Technical Education, Singapore* (Singapore, Government Printer, 1961).

[2] *Commission of Inquiry into Education, Singapore*, op. cit., p. 19, para. 4.7.

[3] The remainder of this section is editorial comment.

100 (its capacity is 200). The enrolment of the Teachers' Training College[1] included 168 secondary teachers, who are graduates already in service (43 in the English and 125 in the Chinese medium).

The Commission of Inquiry[2] has no novel panacea for this situation: 'It is clear that there is an urgent need to increase the flow of arts and science graduates into the teaching profession. In our opinion, immediate consideration should be given to the following measures: (a) The improvement of the terms and conditions of the education service and the removal of the anomalies in the salary structure. It is essential that the service should be made sufficiently attractive to bring in and retain the abler graduates of our universities. We have . . . recommended the setting up of a special committee to go into the whole question of salaries and conditions of service. (b) The expansion of facilities of university education with a view to meeting the increased demand of our young people for higher education and increasing the output of arts and science graduates. The increase in their supply may be expected to increase the number of graduates joining the teaching profession.'

The first recommendation, inevitable whenever the supply of teachers is in question, is likely to perpetuate a series of inflationary salary problems, since the up-grading of any class of salaries invariably provokes discontent among those in other classes of salaried workers whose status in salary terms has now been matched by those up-graded. Further, when anomalies are removed, the second party to the anomaly who has not benefited, will at once feel aggrieved. The second solution, if the commission is hoping to increase the supply of teachers by saturating the market with graduates, is surely creating a most unfavourable situation for economic salary bargaining, and it does not follow that if the present output of graduates will not enter the teaching profession the situation can be eased by creating more graduates with presumably the same reasons for not entering upon a teaching career. An answer is more likely to be found along the general lines of recommendation (a) by making the actual conditions of training and teaching more attractive, in revising the machinery of promotion, and in providing internal incentives such as refresher courses and opportunities for further education.

Sarawak

The chief developmental activities of the 1964-68 Plan are: (a) an increased production of cash crops—rubber, palm-oil and timber; (b) an increased food production of rice, fruit, vegetables and live-stock; (c) the extension of the road transport system; (d) expansion of education and health facilities.

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1. Incidentally, it is interesting to note that at this college, of a staff of 123 full-time and 31 part-time lecturers, there are 3 in science and 5 in mathematics, but 10 full-time and 4 part-time in physical education (see *Commission of Inquiry into Education, Singapore,* op. cit., p. 77).
2. Op. cit., p. 84.

The 1960 Census showed that of 2,829 of the population who had completed a secondary education 2,107 were Chinese, 417 European, 104 Malay and 71 Indigenous people:[1] at university level 279 graduates were European, 205 Chinese, 7 Malay, 2 Indigenous and 55 'others'. If Europeans and 'others' are omitted as expatriates, the dominance of the Chinese is overwhelming.

The change-over of the Chinese secondary schools to the English medium (now a condition for the award of government grants), will swell the numbers of pupils passing the Overseas School Certificate and Higher Certificate examinations: these figures were 277 and 43 in 1962. Projections suggest some 1,800 entrants for School Certificate in 1969, of whom perhaps 350 might secure a Higher Certificate in 1971.

The urgent manpower needs are for professional and administrative personnel in the following fields: central and local administration; teaching; medical and para-medical field work; agriculture—research and field work; and public works and transport.

In 1960, of the existing combined stock of 9,000[2] Category I and II personnel, 5,000 were Chinese, 1,650 Malay, 1,650 Indigenous personnel and 700 European: Indigenous people represent one-half of the total population, the Chinese one-third and Malay less than one-fifth. With the educational advantage of the Chinese, which must continue—education is a lengthy process—for at least another ten years, the task of filling an acceptable number of senior posts with indigenous personnel is both essential and difficult. Possibly the major training emphasis, under the aegis of expatriates acting in an advisory rather than an executive capacity, should be primarily in administration, but neither education nor agriculture should be disregarded. This is better theory than practice: there have been instances in this situation when the counterpart has assumed the office and left its responsibilities to the expatriate, who finds it less irksome to act executively than to insist that he is involved in a training situation.

General manpower requirements. The Category I (1,600) and Category II (7,400) jobs revealed by the 1960 Census included all professional, technical and sub-professional grades (except teachers without a secondary education), all administrators and executives, all managers and directors, stenographers, 25 per cent of business proprietors, 40 per cent of clerks, all ships' officers, insurance workers, estate owners and transport controllers. In ten years this stock ought to be substantially increased, and the quality of the job-holders improved. The following composition of the first two categories, based upon a continuing policy of training overseas (246 Sarawak students were studying overseas in 1962) is suggested for 1970, on the assumption that (a) it might be reasonable to double total I and II stock to about 18,000, and that (b) the increase in I would necessarily be less than in II.

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[1] Including Land and Sea Dyaks, and Melanaus.

[2] Of these, as the statistics for educational qualifications show, only 3,771 had a full secondary (2,829) or higher (942) education.

Category I	
Stock 1960, less 30 per cent wastage	1 120
Returned from study and training abroad	780
	1 900
Deficiency	600
Target	2 500

Category II	
Stock 1960, less 30 per cent wastage	5 180
Additional School Certificate holders (grade 11)	5 000[1]
Additional Junior Certificate (grade 9) or failed School Certificate	5 000[2]
Returned from training abroad (remainder)	370
Target	15 550

The main problem, apart from training to up-grade junior certificate qualifications, is the shortfall of 600 Category I personnel. Against this estimate of target figures for the two categories the public sector requirements[3] up to 1970 are set out in Table 37.

On these figures the stock available for the private sector would be as shown in column three below:

	Total stock	*Public sector*	*Remaining for private sector*
Category I	2 500	990	1 510
Category II	15 550	9 150	6 400

The total stock seems to reach a reasonable figure, but while the Category I stock would appear to be more than sufficient for the private sector, this is not adequately catered for with 6,400 Category II personnel. The final target figures are therefore adjusted to 2,000 in Category I and 16,000 in Category II, including at least 5,000 Junior Certificate holders doing jobs which will later demand the School Certificate qualification and 3,000 primary teachers (otherwise excluded from this category).

Development of training and educational facilities. As may be expected, existing training facilities are limited. Agricultural assistants (below diploma level) can be trained in Sabah, rubber assistants can be given estate training in Sabah and Malaya: Sarawak trains junior agricultural assistants and mixed extension teams. A two-year land survey course for officers from both

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[1] Together with 1,500 passes proceeding to Higher School Certificate.

[2] These, by standards used elsewhere, would be underqualified for Category II, and Hunter emphasizes the need for supplementary training.

[3] These assessments are established in detail in Hunter's report.

TABLE 37. Public sector, 1970: requirements by educational qualifications

	Category I	Category II	
	Graduate	Diploma-level	School Certificate or Junior School Certificate with additional schooling
Agriculture, forestry, lands and survey	110	265	775
Medical services	100	200	800 (?)
Engineering, technical	130	240	650
General administration	200	270	800 (?)
Teachers:			
(a) Senior secondary and teacher training	450		
(b) Junior secondary		650	
(c) Senior primary			2 000
(d) Junior primary			2 500
TOTAL	990	1 625	7 525

Sabah and Sarawak has been set up with New Zealand Colombo Plan aid at Semonggok near Kuching.

The Medical Department, which has developed a well integrated service of assistant and para-medical personnel, was in 1962 engaged in training nurses, midwives, hospital assistants, laboratory technicians, assistant health visitors and 261 'home helps'.

Technical training facilities are developing: there is a one-year course in road survey, followed by another year's course by correspondence; and a developing Trade School in Kuching offers full and part-time courses in metal- and wood-work (to City and Guilds standards), electrical installation and automobile maintenance; entry is at Junior Certificate level.

Teacher-training colleges are maintained at Batu Lintang and Sibu, and a third college is to be added:[1] between them, at current output rates, 1,000 primary teachers could be produced by 1969; but allowing for wastage this is likely to fall short of requirements by about 500 teachers. For secondary education, the government aim is to maintain an entry of 30 per cent of primary school leavers, and this by 1968/69 will require an additional 400 teachers—i.e., allowing for wastage a required output of 500, of which Batu Lintang college might produce 230. The gap would have to be filled by graduates or trainees returning from abroad and by expatriates.

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[1] Again with aid from New Zealand under the Colombo Plan: the course at Batu Lintang will then be up-graded.

The over-all problem of the expansion of educational facilities to meet manpower needs is one that must be shared with Sabah, which with Sarawak may be conveniently termed Eastern Malaysia. Ultimately a college of university standing will be required to serve the two States; but the joint output of candidates with Higher School Certificates (the entrance requirements of the universities at Singapore and Kuala Lumpur) was 78 in 1962: it will have to rise to 500 to support a college. Meanwhile, hard put as the universities of Malaya and Singapore are to meet their own needs, they must also help to fill the graduate requirements of Sabah and Sarawak.

As at least interim measures, both to develop training facilities and to prepare for the ultimate establishment of a university college, it would be desirable to set up the following joint institutions: (a) an agricultural college[1] with the most advanced courses reaching diploma standard (grade 13 to 14); (b) a school of forestry;[1] (c) a technical college, also with courses rising to diploma level; (d) a school of education to train teachers for the upper forms of secondary schools.

Concerning these proposed foundations, Hunter adds: 'It may well be desirable that they should become institutes giving a diploma which is recognized or indeed given by a parent university. After a few years they would easily move on to become faculties of a University College of Eastern Malaysia. It has also been suggested that a "Junior College" of Arts and Science might well find a place on the island, to grow up, in its turn, and join the institutes in forming such a (University) College. While there is ample precedent for linking special institutes to university—for example, in East Africa—the "Junior College" proposal requires careful thought. It would have to give at least as good a qualification as the present sixth forms for purposes of university entry; and it might be unfortunate (and expensive) to destroy present sixth form work in order to feed a new institution simply for the prestige of the name "college".'[2]

A further, and perhaps even more immediate need, is an institution and scheme for the training of indigenous personnel in central and district administration, for which a local staff-training college for Eastern Malaysia might well be established. Hunter suggests a two-year course after at least a good School Certificate result, to be followed by a year's practical training, some of it abroad, possibly in Kuala Lumpur or Singapore. Whilst for prestige reasons a diploma award might be necessary, the training to be given should be highly practical rather than academic.[1]

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[1] It is suggested that these two institutions might be combined to make the most economical use of the supporting science facilities that both will need.

[2] It may also be argued, however, that the prestige of the sixth form is an importation from the West in general and Dr. Arnold's Rugby in particular, which may well afford an example of that type of educational tradition which, excellent in its original context, may not altogether meet the needs of the society into which it has been transplanted. British head masters are prepared to defend their sixth forms to the last prefect against the Junior College concept, but when qualified staff are rare and well-equipped laboratories are rarer, such a concept cannot be lightly disregarded. See also Chapter 9, p. 313-18.

Sabah

The problems of Sabah intimately resemble those of Sarawak. The main aims of development are to resettle shifting cultivators on more fertile land to grow cash and food crops, to promote the forest and timber industry, to develop road and air transport, and to improve and expand education at all levels.

The population is widely dispersed in almost inaccessible country, and the concept of employment is so remote that 16,000 Indonesians have been imported on the east coast as rubber tappers. As education spreads and the younger peasants seek wider opportunities of skilled and semi-skilled employment, this labour shortage will of course disappear—and in the towns almost certainly develop into an unemployment problem.

Again, the Chinese—though in Sabah less than a quarter of the population—have an enormous education start: in 1960 1,178 had completed a full secondary education as against 92 of the Indigenous population who, however, in 1962 constituted nearly one-fifth of the secondary school population, as against only about one-ninth in 1960.

Doubling the 1960 stock of 6,500 by 1970, as for Sarawak, sets a target stock of 13,000, implying a total output of 8,430 Category I and II personnel in ten years (including 1,930 to cover 30 per cent wastage). This, matched with rough estimates of possible School Certificate passes of 550-600 in 1966, rising to 1,000 by 1970,[2] indicates a deficit in the two categories of 3,330 (assuming the students going abroad and not returning by 1970 would be more than compensated for by others who do return in this period), which would have to be made up by the training of Junior School Certificate holders, who may or may not have had some further schooling up to grade 11.

Posts in the public sector to be established by 1970 have been estimated by Hunter on the basis of government draft estimates for 1964 (see Table 38).

The total of 7,880 posts in these categories leaves substantially less than half the stock for the private sector; but this is scarcely likely to develop as rapidly as the public sector. About 60 per cent of the additions and replacements to Categories I and II would be met from personnel holding at least a School Certificate; but 40 per cent would have little more than a Junior Certificate and 76 per cent a School Certificate or less.

Agricultural assistants are trained at Tuaran; the School of Nursing is

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[1] Such a college might well be affiliated to the proposed university college when it is established, but should probably not form a constituent part: it needs the support of a university staff and facilities, but a wider freedom than could be reasonably afforded by full academic control.

[2] Two hundred and twenty-five in 1962.

TABLE 38. Public sector posts for 1970

	Category I	Category II	
		Diploma	S.C. or J.S.C.[1]
Agriculture, lands, etc.	100	180	600
Medical services	70	130	700
Engineering, technical	80	190	500
General administration	190	240	700 (?)
Teachers:			
(a) secondary	300	400	
(b) primary			3 500
TOTAL	740	1 140	6 000

1. Lower division of Category II, otherwise usually considered as Category III.

recognized by the General Nursing Council in England, though midwives apparently have to be sent abroad for training; laboratory technicians go to Sarawak; health inspectors to Singapore after an initial two years' training in Sabah. In the technical services there is not only a serious shortage of unskilled labour, but also of artisans and of technicians. In 1963 there was one trade school, a 'trade testing' system and an in-service P.W.D. training scheme. The difficulty has been to attract recruits, those qualified preferring to go in for administrative jobs or commerce, so that contractors have been obliged to import their own technical staff.

Kent Teachers' Training College at Tuaran graduated 85 teachers in 1962; a Teacher Training Centre has been operating since 1962 to provide staff for native voluntary schools; and Gaya College at Jesselton, opened in 1963, with a resident enrolment of 240 in two-year courses, training teachers for primary and junior secondary schools. The total anticipated output by 1970 may be set at 1,240 plus some 160 senior secondary teachers training abroad. Roughly estimating secondary school population by 1970 at 13,500, a teacher stock of around 700 should be aimed at. This, given a stock of 304[1] in 1962 and 30 per cent wastage in eight years, would involve a total output of 490 secondary teachers. With current facilities and patterns of training abroad, such a target cannot possibly be met; and for another ten years it seems that at least half the senior secondary teachers will have to be brought in from abroad, and Malaya and Singapore are unlikely to be able to help much because of their own serious teacher shortages.

The five suggestions made for joint institutions under the heading of

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[1] Including nearly half who have insufficient or no training.

Sarawak apply with equal force to Sabah; and post-secondary training in these two States must be considered a prerequisite of further development.

Summary

The following summary of the consultant's recommendations, both in respect of the several States of the Federation, and of the Federation as a whole, closely follows his report.

I. Institutions. (a) *Post-secondary level.* It is suggested that Eastern Malaysia should develop forthwith a series of diploma-level institutes with School Certificate entry. These would be: (i) an agricultural college; (ii) a school of forestry, with research attached; (iii) a technical college; (iv) an institute of education; (v) an administrative training institute. In due course these could form the nucleus of a University College of Eastern Malaysia, about the time when Higher School Certificate passes reach 500 per annum for Sarawak and Sabah combined. They would be joined by an arts and science stream, possibly in about 1970 or soon after.

In Singapore a second technical college may well be needed soon after 1970.

In Malaya a second and possibly a third technical college will be needed, to give eventually a combined output of 500 per annum, and probably also a commercial college in Kuala Lumpur. The Agricultural College at Serdang could be expanded to give an annual output of 100 students.

(b) *University level.* It would appear that Malaya will need two new universities or university colleges, one as soon as possible (1967?) and one very soon after 1970. If one were to be in Penang, the second might well be sited on the east coast where an agricultural institute would certainly be desirable. Eastern Malaysia will need a university college by about 1970/71.

Total enrolments at university level in Malaya should reach 6,250 by 1972 and total output about 2,000 by that time; to this must be added enrolment in Singapore University (about 5,000) and Nanyang University (about 5,000). This would give 16,250 students enrolled from a population of about 13.5 million, i.e., 0.14 per cent.

II. Subject priorities. If the targets suggested in earlier sections are accepted, the implications are as follows.

The first priority is the production of university graduate teachers for secondary schools, and this should be a first call on both the arts and science faculties of all the universities.

Second, a large increase in agricultural field and research staff will be needed in Malaya and Eastern Malaysia. The solution does not lie entirely in expanding the numbers taking a degree in agriculture, but in the expansion of the natural science departments at both undergraduate and postgraduate level.

Serdang College would have to aim at an output of 100 *diplomates* each year.

Third, there will be a need for the expansion of technical and commercial training, in Singapore especially, but also throughout Malaysia. Three new technical colleges would be needed, one in Eastern Malaysia, one possibly in North Malaya, one later in Singapore.

Fourth, a second university faculty of engineering will be needed in Malaya.

If Malaysia is content to accept a doctor-to-population ratio of 1 : 5,000, a third medical school should not be necessary. However, to improve this ratio to 1 : 2,500 a third school would be necessary some time after 1970.

III. Pan-Malaysian institutions. It may appear that not enough attention has been given to institutions serving the whole of Malaysia from a single centre. In fact, however, the three universities (Kuala Lumpur, Singapore, Nanyang) at present and for some years will serve Eastern Malaysia—there is no doubt that post-secondary 'diploma' training should be locally developed there. The case for centralized institutions is, naturally, applicable to highly specialized work, with relatively small numbers, which it is uneconomic to duplicate—not for the basic educational system. As such, they will tend to come later—at post-graduate and research level. It is certainly important that post-graduate work should be concentrated, probably in Singapore and Kuala Lumpur, and balanced. There may well be a case for building forestry up as the speciality of Eastern Malaysia;[1] technology in Singapore; administration, education and some agricultural subjects in Malaya.

INDONESIA

The Government of Indonesia, in the face of grave political and economic difficulties, has been engaged in laying the foundations of an educational system geared to the needs of a population which has already passed the 100 million mark. The results of this endeavour may be found at all stages —in plans, in buildings under construction, in schools and faculties housed in temporary premises, in ambitious projects operating at various levels of success. The progress made since independence, both quantitatively and, particularly in the case of higher education, qualitatively, is undoubtedly remarkable.

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[1] In planning for the institutions which will ultimately develop into the University of Eastern Malaysia, Hunter notes, in his section on Sabah, that the Agricultural Training School site at Tuaran, Sabah, would lend itself well to the development of a diploma-level college, and that the teachers' training colleges in Sarawak could be expanded into a school of education. The dangers of fragmentation and the attractions of an efficient and economic amalgamation of training facilities present the planner with a dilemma. Whatever the better administrative and professional solution, it is likely that the views of the peoples of Sabah and Sarawak will not be easily reconciled, in one State or the other, to forgoing the acquisition of at least some aspect of higher education in the cause of efficiency and economy.

The statistical details of the present situation, however, are confused in the extreme: figures are incomplete, their coverage unspecified; they are rapidly rendered obsolete by the rate of expansion; they may represent hopes or projections rather than actual achievement; when relating to private institutions, they are at best subject to various sources of error, they are generally incomplete—frequently unavailable—even more frequently non-existent.

It is stated that by 1962/63 there were 9,410,575 children in public schools and 1,600,000 in private schools:[1] the 1961 figures for junior secondary schools, including vocational education, showed 618,000 pupils: the 1959/60 figures for senior general and vocational schools were 192,857.[2] The output of students eligible for university entrance in 1962/63 was approximately 60,000; and total State university and other higher education enrolments in 1961/62 were about 66,000 plus an estimated 31,000 in private universities, a total of 97,000.[3] Of these some 54 per cent were in arts, law and social sciences, 22.4 per cent in scientific, technical and medical fields, and 23.6 per cent in teacher education and training. There was also a considerable concentration of enrolments in the first stages of higher education, particularly in the propaedeutic year.

In the first Eight-year Development Plan, outputs[4] from State institutions of higher education were envisaged as shown in Table 39.

Even the first plan targets for 1964/65 should be increased by some 500 graduates from private universities, and would be at least doubled if in addition to *sardjanas* (with the exception of medicine, normally requiring a minimum of five years' study) *sardjana muda* graduates, completing a three-year course, were to be included.

Agriculture

Known enrolments in agriculture and veterinary science faculties in 1962/63 were around 3,300, and about 200 five-year degrees were awarded in the same period. Below the university level are about 500 graduates a year from agricultural secondary schools, a number of whom proceed to further education in the universities or the Ministry of Agriculture's academies.

Staff figures for the country's agricultural services are not available, but

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[1] The meticulous accuracy of the first figure and the rounding of the second are equally typical of the nature of the statistical information available, not only to external research agencies, but equally to Indonesian planners themselves.

[2] Including secondary-level teacher training. Total in 1961/62, 213,000.

[3] This total may be raised by 3,000 to 4,000 in accordance with higher estimates of enrolments in government academies—i.e., 9,000-10,000 instead of 5,000.

[4] (a) There is an extremely wide margin of error in these figures which it has proved impossible to check. (b) Revised government targets for 1965 are indicated in the last column, and these show some wide variations.

TABLE 39. Planned outputs from State institutions of higher education

Field of study	Estimates of actual output 1959/60	Plan targets		Revised government targets 1965
		1962/63	1964/65	
Law	150	350	500	1 804
Economics	100	250	400	
Medicine, dentistry and pharmacy	330	520	695	793 (M) 614 (D and Ph)
Technology	170	225	300	630
Agriculture	130	200	215	310
Language and literature	45	100	150	288
Pedagogy	20	50	75	2 500[1]
Veterinary science	45	90	120	115
Maths/physics	30	50	100	25
Chemistry/biology and others	210	300	380	200
TOTAL	1 230	2 135	2 935	7 279

[1] The lower figures in the earlier estimates apparently apply only to graduates in pedagogy in the narrow sense of the term and do not include other teacher-training graduates.

there are indications that the whole service, both research and field, needs an overhaul. Assuming that requirements may be set at an initial target of at least double the staff provision suggested for the Philippines, Hunter proposes the following targets to be reached as soon as feasible:

	Field force	*Teaching and research*	*Total*	*Annual output over ten years*
Graduate officers	2 000	5 000	7 000	700
Diplomates	5 000	3 000	8 000	900
Field assistants			30 000 to 35 000	2 500

In practical terms a graduate output of 600 by 1971,[1] with corresponding *diplomate* provision, would probably ensure a sound basis for further development: 400 of these might well study for the three-year *sardjana muda* in the natural science departments before an agricultural specialization. The major obstacle to development is the shortage of university teaching staff.

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[1] If the revised higher target for agricultural graduate output in 1965 is even in part realized, the 1971 objective should become easier to reach.

for which the suggested remedies are the temporary employment under contract of expatriate staff, a greater provision of scholarship abroad, and salary and other incentives to promote recruitment.

Medicine

The doctor/population ratio in 1960 was estimated at about 1 : 50,000 with a stock of a little over 1,900. The output then was 240, with a planned rise to 500 (out of a total graduate production of doctors, dentists, medical technologists, etc., of 695) to be reached in 1965.

The following growth rates are proposed by Hunter to indicate possible targets for increasing the ratio:

Stock 1965	*Wastage to 1970 (20 per cent)*	*Output 1965/70 (500 rising to 700)*	*Stock 1970*	*1970 ratio (118 million[1] population)*
3 000	600	3 000	5 400	1 : 22 000

Stock 1970	*Wastage to 1975 (20 per cent)*	*Output 1970/75 (800 rising to 1 500)*	*Stock 1975*	*1975 ratio (132 million[1] population)*
5 400	1 080	5 600	9 920	1 : 13 000

Engineers and scientists

The total engineering enrolment of the two State Institutes of Technology, the five State and several private faculties in 1962 was 8,165, of which the institute at Bandung accounted for about 3,500. In addition, at the institutes and in science faculties there were nearly 3,000 enrolled for natural sciences and mathematics. The planned output for 1964/65 was 525—300 in technology, 125 in chemistry/biology, and 100 in mathematics/physics. The output of graduates with first qualifications (three-year *sardjana muda*) should almost treble this number. This qualification is not regarded as a degree and, with some exceptions, is apparently not valid for professional status; but it is an extremely useful technical qualification for Category II staff. Furthermore, the revised 1965 target for engineering graduates more than doubles the original estimate.

Considering that a sustained industrial expansion can scarcely be contemplated before the agricultural economy of the country has been placed on a sound basis, Hunter feels that an annual output of 400 fully qualified engineers together with 1,200 technicians should prove adequate for some time to come.

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[1] Indonesian estimates of population growth are higher—totals of 135.5 million and 150 million respectively being reached in 1971 and 1976 (National Institute of Economic Research).

It is accordingly suggested that since such an output appears to be well within the capacity of existing provision, it is an appropriate time to undertake a detailed exploration of the future technological manpower needs of industrial expansion in the various key fields in order to avoid future imbalances between these needs and the output of graduates. Account would have to be taken of the military technologists, the cream of present production, who would become available for development activities within the civil economy when the Government finds it possible to reduce the present large scale of the armed forces. However, in the long term, Hunter hazards the over-all estimate that from 1970 onwards it would be necessary to produce at least 600 engineers and 300-400 physical scientists per year. In regard to Hunter's emphasis on science (which is, however, remarkably less than in Thailand and the generally proposed ratio), while Indonesian estimates for 1965 vary between an output of 100 to only 25 graduates in mathematics/physics, the recent policy to raise the ratio of science and technical to arts and social science[1] faculties from 46 : 34 in 1962 to 110 : 55 in 1965 should help in time to provide an adequate increase in outputs.

Teachers

On a rough estimate of 240,000 students in secondary schools in 1965, rising to 350,000 or at most 450,000 in 1970, including 70,000 in vocational schools in 1965 and 100,000 in 1970, Hunter considers that the need for teachers in the latter year, on a ratio of 1 : 30, would be 12,000. Since the planned output for 1964/65 is about 2,500,[2] there would on this basis seem to be no particular difficulties in this field.[3]

Total university outputs

While the balance of enrolments in 1962 heavily favours the arts and social sciences, the balance of output for 1961/62 is very different: 44 per cent in science and technology as against the rest in all other fields, including teacher training. The same is true of the plan targets for 1964/65: (a) according to first estimates, at least 1,430 ('others' listed as 300 probably include some science graduates) science/technology graduates out of a total of 2,935, and (b) according to later estimates, 1,979, out of a total output of 6,571 including 2,500 teacher-training graduates. Hunter suggests the following model for balanced graduate output in 1970:

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[1] Not including teacher training.

[2] Including 315 plus full graduates (*sardjana*), 1,300 *bakaloreat* (three-year graduates, i.e., grade 15) and over 800 B. I and B. II in-service graduates, corresponding respectively to the standard qualifications.

[3] This may well be a far too optimistic analysis of the situation for two reasons: (a) It does not allow for the fact that the total output must provide teachers for the junior high school (grades 7-9) as well as for the senior level (grades 10-12), since primary school teachers are now prepared only at the senior secondary

	Output target (p.a.)
Agriculture and supporting sciences	600-800
Medicine and supporting sciences	1 000 (700 doctors, 300 scientists/teachers)
Engineering and technology	700-1 000
Teaching	2 000-2 200[1]
Arts	2 000
Other sciences	3 000[2]
TOTAL	9 300-10 000

By this time enrolments will have reached at least 150,000, and quite possibly a much larger number.[3] If the total output of graduates is then raised to 6-7 per cent of enrolments, it would seem that the limits of expansion will, for some time to come, have been reached, if the problem of an 'educated unemployed' is not to be raised.

On the basis of high-level (Category I and II) stock for 1960 calculated at roughly 440,000 from 1961 Census data, and assuming that senior secondary graduates would double from 60,000 in 1962/63 to 120,000 in 1970, giving a total output for the decade 1960-70 of about 750,000, Hunter gives the following rough picture of the situation in 1960 and 1970.

Stock 1960	*Wastage 40 per cent*	*Addition 1960-70*	*Stock 1970*	*Percentage of population*	
				(1960)	*1970*
440 000	176 000	750 000	1 100 000	(0.44)	0.93

This implies a doubling of the proportion of potential high-level manpower over the next ten years, and this, in the light of indicated current outputs, might well happen. Whether the posts to absorb this output will be created

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teacher-training level. Minimum estimates for enrolments in grades 7-9 of the Unesco Planning Mission for 1966 are 1,134,000 and for 1971, 1,474,000. (b) Even for grades 10-12, projected enrolments are set very low. The Unesco Planning Mission, assuming no increase in the proportion of the age group so enrolled, gives minimum projections of 345,800 for 1966 and 561,800 for 1971; maximum projections, assuming an increase in proportion from 6 to 10 per cent for the same years, are 465,700 and 695,600. The Unesco Planning Mission, however, does not attempt to calculate teacher requirements for the secondary level due to lack of adequate data on stock, which in 1960/61 at the senior level included some 60 per cent part-time teachers.

1. This, however, would not meet the need if junior secondary enrolments are taken into account. It would at 5 per cent wastage maintain a stock of 44,000 teachers, which at a teacher/pupil ratio of 1 : 30 would be sufficient for an enrolment of 1,320,000. However, the Unesco Planning Mission estimates total secondary enrolments in 1971 at a minimum of 2,036,000 and a maximum of 3,046,500. Actual 1961/62 total secondary enrolment was 939,800.
2. Hunter himself points out that, though desirable, such concentration on pure science may well prove beyond the limits of achievement.
3. The Unesco Planning Mission's minimum and maximum projections place it at between 171,500 and 265,600.

depends, however, upon the success of economic policy. Accordingly the main manpower recommendations are: (a) concentration upon the supply and training of university teachers for the faculties of agriculture and medicine, coupled with a great increase in the production both of agricultural field and research staff and of doctors; (b) an output of 2,000 graduate teachers for secondary schools by 1970; (c) a moderate expansion of the output of engineering graduates rising to 700-1,000 per annum in the 1970's; (d) a reversal of proportions between the arts and science faculty enrolments, and the considerable expansion of pure science teaching; (e) a target of about 150,000 total enrolments and 10,000 full graduates per annum by 1970, involving a halving of the wastage rate; (f) a major training programme at the post-secondary level to provide the output of three technicians to one graduate.

Hunter concludes: 'Finally, I have made no comment on the probability of Indonesia achieving targets which are certainly theoretically possible. At the time of writing (mid-1964) the prospects were black—inflation, food shortages, "confrontation", shortages of foreign exchange. The administrative machine and services (telephones, communications, etc.) were all perilously in need of repair and maintenance in 1963; above all . . . production of export crops was still stagnant. But such situations can change greatly over five years, if once a full national effort is directed towards the economy. This report is therefore directed to the potential of Indonesia: realization of this potential is in Indonesian hands.'[1]

CAMBODIA

The economy of Cambodia, with about 5.75 million people in 1962, is overwhelmingly agricultural, with rubber and rice forming 70-75 per cent of all exports. While the rubber yield is already high and increased production may be counterbalanced by falling prices, there is, on the other hand, a high potential for increasing agricultural income through more effective rice cultivation, expanded production of vegetable oils, cotton and other fibres, and fuller exploitation of forest products.

Industrial development is largely foreign-financed, is not on a large scale, and is concerned to a considerable extent with the infra-structure—road and rail communications, irrigation schemes and the development of the new port of Sihanoukville.

Education developed with great rapidity between 1951/52 and 1961/62. In 1959 the primary leaving certificate (sixth grade; *certificat d'études complémentaires primaires*) was awarded to 14,760 pupils as against only 1,400 in 1950/51; 54 per cent of the primary age group were in school by 1962, comprising an enrolment of 590,360—over three times that in 1950/51 (182,227).

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[1] The situation as this report goes to press (October 1965) is scarcely encouraging.

The usual two cycles of secondary education, each representing a terminal stage, to be found in all systems derived from French practice, are in operation, and in 1963 there were 3,458 passes at the end of the first cycle, 550 passes in Part I of the *baccalauréat,* and 177 in Part II, the university entrance qualification, as against 126, 42 and 27 in 1953.

At the university level, in addition to the Preah Sihanouk Raj Buddhist University, giving religious instruction to Buddhist monks (107 in 1961), and four specialized technical (2) and professional (2) institutions there is a collection of faculties known jointly as the Royal Khmer University, though in fact the component schools have not yet been either administratively or physically welded into a single university complex—the independence of the faculty is another legacy of French practice.

There were five faculties in 1963, of law and economics (enrolment of 502); science and technology (110); arts and social sciences (*lettres et des sciences humaines*—205); medicine, pharmacy and para-medical studies (416); and education (senior course—217), a total enrolment of 1,450.[1]

The Science Faculty until 1963 offered only preparatory courses with, in 1962, 49 in the pre-medical stream and 71 in two preparatory science courses (mathematics, physics, chemistry or physical, chemical and earth sciences).

The Medical School originally limited its training to health officers (*officiers de santé*), who then, if seeking a full medical qualification, underwent a further three years' course in France. However, a full medical training is now available, and 12 doctors were graduated in 1963, while in 1962, 117 students were enrolled in the medical course; and in health officer courses, 188 in 'medicine,' 38 in pharmacy and 49 in dentistry.

The Institute of Education trains both primary and secondary teachers, 548 and 98 respectively graduating in 1963. There are also two junior teaching colleges.

The Royal School of Administration trains senior (35 places) and middle-level (60 places) administrators, and also gives in-service training courses: there is great competition for places for all these courses. The school is directly under the control of the president of the council of Ministers.

A full professional qualification in engineering is now given at the new Russian-aided Khmer-Soviet Institute of Technology opened toward the end of 1963.[2] Professional qualifications in civil (not in mechanical or electrical) engineering are also given by the School of Engineering conducted by the Ministry of Works for supervisors (three-year course) and engineers (four-year course); in addition the school trains works overseers, draughtsmen and operators.[1] Technical education at the second level, with a planned capacity enrolment of 1,800 is given in the École Nationale des Arts et Métiers: the Collège Technique de Kompong Cham has an enrolment, at the same level, of 266.

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[1] Corresponding Unesco Planning Mission figures for 1963, 550; 230; 440; 420 = 1,640, seem doubtful since they do not include education.

[2] Fields to be covered include electrotechnology, agricultural hydraulics, architecture and building, mines, and textiles. Entry is by competition after the *baccalauréat,* and instruction includes two or three years of general study and three or two years of specialization, depending on the field chosen. The institute has been planned

Finally, the Ministry of Agriculture offers a three-year course to students who have successfully completed the first cycle of secondary education (grade 10)—there were 600 candidates for 197 places in 1963.[2]

There then follows in Hunter's report a comparative study of the manpower problems of Cambodia and Uganda, also a developing country with a population of similar size and at a similar stage of development. Hunter had previously surveyed the situation in Uganda with Professor F. H. Harbison as a consultant,[3] and the conclusions of this study have contributed to the formulation of the following proposals for Cambodia: (a) assuming some stringency in the budget, a gentle 'go-slow' policy on the further development of primary education, whilst developing the agricultural education of the adult population,[4] (b) a strengthening of the quality of the first cycle of secondary education both as a preparation for vocational training, and also to raise the standard of second-cycle work; (c) a concentration on further training for first-cycle leavers in teaching, agriculture, paramedical fields and artisanal employment; (d) the unification of the faculties into a single university with a full-time staff; (e) a strict control of the amount of higher

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to produce an annual output of 200 graduates, but up to 1964 it had not been possible to secure sufficiently qualified candidates and in 1963-64, 50 students were attending preparatory courses.

[1] Since 1961, 20 engineers, 30 supervisors and 40 operators and draughtsmen have graduated each year.

[2] For further agricultural education, a Royal Institute of Agronomical Sciences is planned to train Category A officers, at its first operational stage providing a short three-year course following the full *baccalauréat*. Later this is to be up-graded to a full four-year cycle of studies.

[3] *High-Level Manpower in East Africa*, Preliminary Assessment, 1962.

[4] (a) This recommendation is based, of course, on the necessity for allotting priorities in view of limited financial resources, and primary education is not given a high priority. The hope that informal education will be given by parents or the community does not appear to be based on any evidence, either in Cambodia or elsewhere, that such a substitute for formal schooling might either be attempted, or successful. It is, however, possible that a development of the 'pagoda' schools might offer a practical temporary solution to this difficulty. The great danger in lessening the pressure to attain universal compulsory primary education as soon as possible is, of course, the perpetuation, in the absence of such a system, of illiteracy. The difficulty about temporarily sacrificing the extension of primary provision in order to develop secondary facilities, sensible though it may seem, is that it is not likely to be socially or politically acceptable. (b) Recent impending reforms in agricultural education envisage its development and expansion at lower (grades 8-10 inclusive), middle (grades 11-13) and higher levels.

technical education to correspond with limited growth in industrial employment opportunities.[1]

The report on Cambodia concludes with a further examination of three major fields—agriculture, teaching and medicine.

Agricultural education

The development of an agricultural service to exploit the very considerable potential of the country needs, it is suggested, a three-tier system at the following levels with approximate minimal targets:

Division I. (a) University graduates (four years' post-*baccalauréat II*) to control the field service. Stock of 75 by 1970 with an annual output of 5[2] for the decade ending in the mid-seventies. (b) University graduates to serve as research officers to carry out research on new crops and methods, animal husbandry and processing techniques. They should have a science degree, on the biological side with an agricultural orientation, and postgraduate experience in agriculture. Stock of 200 and an annual output of 15.[3]

Division II. Diploma-level field staff (three-year post-*baccalauréat I*) for the day-to-day supervision of agricultural advance. Stock of 350-400 with an annual output of 50.

Division III. '*Agents de culture*'—four to five to support one *diplomate* field assistant. Stock of 1,500-1,800.

Graduate teachers

The training facilities for primary and junior secondary teachers in 1962/63 appeared to be well on the way to meeting demands;[4] the great problem is the supply of teachers for the second cycle of secondary education, most of whom at present are expatriates. The relationship between teachers trained in the Institute of Education and those qualifying through the Faculty of Arts needs clarification, and a study of incentives will have to be made.[5]

[1] Recent estimates in Cambodia have envisaged a production of 20 engineers a year during the next ten years as ample; but the output of the Technical Institute may soon outstrip this.

[2] Including animal husbandry and fisheries, but not veterinary science.

[3] Here a special emphasis on 'agricultural sciences' contrasts somewhat with the position adopted in relation to Thailand.

[4] However, since the National Institute started functioning only in 1956, there is at present a considerable shortage of qualified primary school teachers. In 1963 the pupil/teacher ratio in primary schools was 50 : 1 and 65 per cent of the secondary-school teachers had only qualified for primary-school teaching. The Ministry of Education considers that as against an annual output of 700-800 in 1963 the real requirement is for 2,000, if the under-qualified are to be replaced or up-graded.

[5] Since the completion of Hunter's report, plans have been made to establish a higher teacher-training school to train teachers for the second cycle with an annual output of 30 arts and 30 science teachers. It is to recruit students from the preparatory year

Health services

Life in the countryside is rugged and travelling conditions can be difficult in the extreme. The situation has not attracted qualified doctors, and great reliance has been placed upon the three- to four-year trained health officers.[1]

Medical staff in 1962 included 35 doctors (23 of them Cambodians who had completed their training in France), 125 health officers, 1,257 nurses and 887 ancillary personnel: there were 4,300 hospital beds.

If the health officers are counted as doctors, the over-all doctor/population ratio is 1 : 36,000: if they are not so counted the ratio is 1 : 300,000. In five years this could be improved to 1 : 15,000 by the annual output of 20 doctors and 40 health officers. Recruitment is slow, and training failures numerous. Nevertheless, a target for a combined force of 750, giving a ratio of nearly 1 : 10,000, should be set for 1972, which would involve an annual output of 30 doctors and 65 health officers by 1970.

Such measures would involve the post-secondary (first-cycle, grade 10) training of auxiliary staff—nurses, midwives and technicians—on a large scale,[2] and once again the importance of this cycle in producing potential Category II personnel for on-training in agriculture, teaching and medicine cannot be over-stressed.

VIET-NAM

The position in Viet-Nam is gravely complicated by the absorption into the armed forces of a large number of well-qualified personnel and by the extent of American and other aid which is responsible for what may well be inflated standards in the provision of educational and other social services, unsupportable save in the present exceptional circumstances.

The resources of Saigon are considerable—highly educated citizens,[3] educational institutions of high calibre, a well developed system of secondary education and a vigorous and indeed turbulent population. Beyond the

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of the *licence* and will be closely linked with the Faculty of Arts. The course is to extend over three years.

[1] cf. the assistant medical practitioners of the South Pacific Health Service, who incidentally are trained at a Central Medical School in Fiji though they come from Fiji, the Cook Islands, New Guinea, Samoa, the Solomon Islands, the Gilbert and Ellice Islands and the Trust Territories of Micronesia—an encouraging example of regional co-operation in training. The point is again raised below, p. 187.

[2] In 1963/64 the Royal School of Nursing and Midwifery had a total of 325 trainees at the following four levels: rural midwives, nursing assistants, sanitation staff, licensed male and female nurses.

[3] But a shortage of Vietnamese technicians. On the other hand, it has also been estimated that in 1959 there was a considerable number of scientific personnel among 400,000 Vietnamese in France and neighbouring countries who 'found jobs not only in business but also on the staffs of institutions of higher learning and of pure and applied science'—John O. Sutter, *Scientific Facilities and Information Services of the Republic of Viet-Nam*, p. 3 (Honolulu, Pacific Scientific Information Centre, National Science Foundation, 1961).

influence of the capital lies a totally different situation—an undeveloped countryside with communities collected and huddled together for protection, and frequently inaccessible to continuous government influence. The danger of educational in-breeding within the inflated government services of Saigon is obvious—the necessary diffusion of high-level staff through the rural economy a difficult and indeed almost impossible process at the moment.

In terms of occupations, the economy is an agricultural one based upon rice, rubber, live-stock, timber and tobacco, but these resources are ill-developed, and agriculture accounts for only 27 per cent of GNP. Although in Saigon itself 94 per cent of the industrial and commercial enterprises employ less than ten workers, a number of major industrial undertakings have been established through foreign aid and enterprise. These include a coal-chemical complex; hydro-electric schemes—one in operation, two in course of construction; an oil refinery; a cement plant; a large fertilizer industry; tyre factories, and a number of smaller undertakings. The requisite technicians have been either recruited from Taiwan, or imported by the major contractors.

In 1963 almost 1.5 million children were enrolled in the five-year primary system, of whom some 276,700 were in private schools, including 6,700 in six-year French schools. The first cycle of secondary education (four years) contained 209,229 pupils, of whom 138,650 were attending private or semi-public schools, and the second cycle 52,981, of whom about half were in private or semi-public schools. In 1961/62, 22,269 pupils completed the first cycle, 10,725 passed the first part of the *baccalauréat*, and 4,545 the second part.

Technical education is conducted at two levels. In 1962/63, there were 15 technical secondary schools which gave courses ranging from two to four years in agriculture, navigation, commerce, and the usual technical subjects. Two higher technical institutes (comprising: (a) schools of civil engineering, electrical engineering and industrial arts; (b) the National School of Agriculture, Forestry and Veterinary Science) also provide secondary-level training[1] as well as professional courses in agriculture, forestry and veterinary science, building construction, chemistry, electricity and industrial arts—all of the professional courses requiring a pass in the *baccalauréat II* science or technical examination as an entrance qualification. The total technical secondary enrolment, including that in the institutes (398), in 1962/63 was 4,652. At the full professional level the enrolment in the same year was 419. There are also the National School of Public Administration (278 on role), two schools of fine arts, two of music, and one secondary school of decorative arts. In 1961/62, 100 full graduate engineers and agriculturists (46), and 449 *diplomates* in technical and agricultural fields were produced.

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[1] *Agents techniques*, a three-year course following completion of the first cycle of secondary education (grade 10).

There are three universities—the State universities at Saigon and Hué and a private university at Dalat teaching law, science and education.[1] Both State universities have faculties of law, medicine, science, arts (*lettres*) and education: in addition Saigon teaches pharmacy and architecture and in 1964 added a separate Faculty of Dentistry; Hué has an Institute of Sinology. Enrolments in 1962/63 nominally totalled 17,419[2] (Saigon 14,503, Hué 2,332 and Dalat 584). However, these figures may be swollen by as much as 10-20 per cent on account of double registration in two faculties. The number of enrolments had actually risen to 20,926 in 1964/65, but the same caveat applies.

Enrolment seems to bear little relation to graduation,[3] and there is a very heavy drop-out at the end of the first year, particularly in science and arts. Thus out of a total arts and science faculty enrolment of nearly 8,700 in 1961/62, about 3,200 presented themselves for the licentiate and only 104 qualified; and out of a total enrolment of around 15,000 in the same year the total number graduating came to only 617. It is, however, suggested, in some mitigation of these figures, that in the science and arts faculties the educational experience of acquiring one or more of the four or five *certificats* required for a *licence* makes a useful contribution to skilled manpower below the highest levels. In all three universities in 1961/62, a total of 258 such *certificats* were issued from science faculties, and 561 from arts faculties.[4]

Manpower requirements in special areas

Agriculture. Consistent progress in the modernization of agriculture must necessarily await the freeing of the countryside from the waste of war: in the meantime it is possible and necessary to plan and work on the assumption that peace and security will be restored. Certainly the present output of trained staff is inadequate, though the few training places available are eagerly sought. The National School of Agriculture moved to Saigon in 1961, where it is inadequately housed either for direct teaching or practical work. In 1962/63 it had an enrolment of 176 in the professional course and of 188 in the Category II course (*agents techniques*). Two other schools at the Category II level at Hué and Can-Tho had a combined enrolment of 148 in the same year.

The numbers of government agricultural staff in 1963 were: Category I, 134; Category II, 197; Category III, 453. These posts cover the fields of agriculture, silviculture and animal husbandry.

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1. Since 1964 also political science, economics and public administration. The Education Faculty, however, is being discontinued in 1966.
2. Not including *capacité* enrolments in law, those of technician in architecture, and of the Institute of Sinology in Hué, totalling an additional 510.
3. See below, p. 177.
4. These do not include propaedeutic *certificats* of the first year (science 515 and arts 443).

The Unesco Planning Mission, basing their calculations upon the usual agricultural indicators of ratios of personnel to agricultural land, forest areas or numbers of stock, proposed a force in 1980 of 6,100 graduates, implying a further force of 30,500 in Category II and annual outputs of 200 engineers, 400 technicians and 600 *agents techniques*. This projection is queried on two grounds: the impossibility of forecasting the number of trained personnel required in twenty years' time, coupled with the fact that it is pointless to undertake an operation so remote; and, by implication, incur the cost of training and maintaining such a force.[1]

Accordingly, drawing a parallel between Viet-Nam and Malaya but allowing for more pioneering work, research and intensive coverage,[2] Hunter finally produces the following targets for 1973:

Category	*Actual stock[3] 1963*	*Target stock 1973*	*Average annual output[4]*	*Subsequent annual maintenance output[4]*
Category I (*ingénieurs*)	134	500	40	20
Category II (*techniciens*)	197	1 200	100	50
Category III (*agents*)	453	4 000	300	160

Industry. A cautious note is sounded here, and a parallel is drawn with the situation in Burma, where an output of Category I and II engineering personnel geared to the needs of initial industrial development soon outran needs when the programme in hand was completed. The same situation

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1. Hunter might possibly have added that the usual type of indicator (in this case, one *ingénieur* for 800 hectares of cultivated land, one *ingénieur silvicole* for 20,000 hectares of forest, one *ingénieur vétérinaire* for 5,000 animals), lends itself very easily to over-estimates by those anxious to make a case for swelling a department or a faculty, and ignores such vital factors as the concentration or dispersal of the selected units; whether or not the land in general is in good heart; the effectiveness of local leadership; and the presence or absence of a host of agricultural incentives such as guaranteed prices or marketing schemes, all of which would be beyond the control of the field officer. In practice there appears to be a sound case for estimates based upon existing stock and training facilities rather than upon formulae which may prove too facile, and too easily manipulated by single-minded agricultural planners.
2. The comparability apparently rests more on areas involved, which in the case of Viet-Nam is only slightly greater (170,806 square kilometres for Viet-Nam; 131,313 square kilometres for Malaya), than on population, which for Viet-Nam is nearly double that of Malaya.
3. This refers only to government staff; and one may query whether, accordingly, the 1973 target perhaps does not adequately cover the private agricultural sector. It has thus been pointed out by the Unesco Planning Mission that the rubber industry, which employs 40,000 workers and accounts for two-thirds of total exports, is almost entirely dependent on foreign managerial and technical manpower.
4. The graduate output is set lower than the actual output of 46 in 1961/62; but meeting the targets for II and III will require sustained effort, as the output of secondary agricultural agents in 1961/62 totalled only 175. Plans for the development of the National School of Agriculture in 1963 called for a teacher-training section to train secondary agricultural education teachers as well as an extension of its professional course from three to four years.

might easily arise in Viet-Nam, where formal training facilities at the graduate and technician levels seem capable of bearing the training load at present expected of them, and where any further major developments of industrialization, are, at least during the next decade, problematical. There may, however, be some shortage at the Category III artisan level. The 1963 outputs were: engineering graduates, 54; secondary technical, including *baccalauréat technique I*, 348; lower secondary technical (grade 9), 508.

The main elements which are missing in the present provision for training are (a) experience in the actual conditions of industrial operations, and (b) administrative and managerial skills such as the handling of finance and personnel.

Accordingly what is needed is not the type of training that can be supplied by the engineering faculty of a university, technical institute or school, but rather one to be obtained partly on the job and partly at such specialized institutions as the National Industrial Development Centre at Saigon.

In any case technology is developing at far too rapid a pace for basic technical education to keep in step with modern developments, and a large portion of what is learned today is likely to be obsolete in ten years' time—thus the responsibility of the employer to co-operate in practical on-the-job training is inescapable. It is also suggested that since the government is owner or part-owner of the majority of industrial enterprises a training-within-industry scheme might serve both its own needs and those of other employers.

Medicine. Assuming the correctness of the 1962 local estimate of a stock of 700 doctors, of whom nearly half were serving with the army, the doctor/population ratio is 1 : 21,000. But outputs are rising—figures of 72 medical doctorates, 26 dental surgery diplomas and 58 diplomas in pharmacy were reached in 1963 for Saigon alone, and the Faculty at Hué, started in 1961, will in 1967 begin to produce graduates[1] so that a total output of 100 doctors should soon be reached, which might rise to 150 if, as is proposed, the Saigon Faculty is rehoused and strengthened. Under these conditions, at an average annual output of 100 and 32 per cent wastage over eight years a stock of 1,280 could be built up by 1970, rising by 1975, at an average annual output of 150 and a lower 3.5 per cent wastage, to 1,800. Even so, the doctor/population ratio would only be increased to 1 : 10,500,[2] a rate of progress which, though doubling the ratio in 13 years, may not be acceptable as sufficient. To increase the ratio still further to 1 : 8,000 by 1975, it would be necessary by 1970 to raise the annual output from Saigon to 150 and that from Hué to 100, giving a stock of 2,300 in 1975. Later, the total output of 250 would ultimately maintain a stock of 6,250 doctors. The solution appears to lie with a more efficient use of the existing schools rather than with the establishment of a third.

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[1] In 1964, 28 students were enrolled in the third year of the faculty and an annual intake of around 60 was maintained.

[2] Estimating 1975 population at 19 million, i.e., 1.5 million less than that of the Unesco Planning Mission projection.

No problem seems to inhibit the provision of an adequate supply of technical and auxiliary staff for the Medical Service—their adequate distribution must, however, await more peaceful conditions.

Teaching. The teacher/pupil ratio in 1962/63 was 1 : 54 in primary, and 1 : 35 in secondary schools. Moreover, some 400 senior secondary teachers were expatriates, mostly from France, as indeed are a large number of the university staffs. Presumably this most valuable form of technical assistance is not, and indeed should not be, inexhaustible, and preparations must be made to effect a stock of replacements. The training of teachers for primary schools, graded according to the type of institution from the urban to the Montagnard school, appears to be well in hand.

For secondary-level teachers, the university courses, recruiting by competitive examination after *baccalauréat II*, are to be extended from three to four years, including a preparatory year in the arts or science faculty in accordance with the desired field of specialization. In 1962/63 total enrolment at the three universities was 1,073 and the output in 1961/62, 276.

In addition to the university facilities, which are to be expanded at Saigon and Hué but discontinued at Dalat in 1966, a Technical Teacher-Training Centre was established in 1963 at Saigon which provides at post-*baccalauréat II* level (a) two-year courses for teachers in the first cycle of secondary education and (b) four-year courses for teachers in the second cycle. Each course admitted a first batch of 25 students in 1963. Thus a total output of 330-50 may soon be reached; and the Government has set a first target of 375, which will maintain a stock of 9,500 teachers in the field to teach 285,000 pupils on a ratio of 1 : 30.

This may seem marginally adequate for the time being so long as secondary enrolments by 1972 do not rise far above this figure;[1] there are a large number of students training in France and the supply of expatriates both from official and from private sources is not likely to dry up abruptly. Another major gap in the training facilities had been in the provision of qualified teachers for the second-level technical institutions, for which, as indicated above, specific provision is, as recommended by Hunter, now being made.

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1. The Unesco Planning Mission projects 1975 secondary general enrolments at a minimum of 521,000 (second cycle 73,600) and a maximum of 646,000 (second cycle 82,290). On this scale of expansion additional provision would have to be made for the production of first-cycle secondary teachers, through accelerated courses for *baccalauréat* graduates of the type operated by the Saigon Faculty of Education. These in 1962 were two-year evening courses, and it was planned to achieve an annual output of 300 of first-cycle secondary teachers.

Conclusions

In Hunter's view there is a danger in Viet-Nam of the education system overproducing for employment opportunities, a situation at present hidden by the demands of military service of one kind or another. He therefore counsels caution in the further development of higher education save in fields such as agriculture, medicine and teaching where the Government can guarantee the provision of posts essential to the economy.

Furthermore, he suggests that the main wealth of the country must still be sought in the agricultural sector, which in present circumstances cannot be developed adequately, and in which the conditions of foreign aid, with low cost inputs, have both dulled government to the need for agricultural development and deprived farmers of the incentive of rising prices.[1]

With the still-growing demand for education and the adequate expansion of the university system, the planning of secondary education to offer terminal courses is clearly desirable. Hunter again puts forward the view, which this study endorses, that the most effective technical training is given at the post-secondary level (i.e., after grade 10 in Viet-Nam), when a background of the basic disciplines has been built up by a process of educating the whole person rather than by training in specific skills. Were such a policy established with a sound system of on-the-job training and sandwich courses to supplement, particularly in the provinces, the work of metropolitan technical institutes, it seems reasonable to suppose that not only Viet-Nam, but a number of other countries in the region might avoid the overcrowding of their universities with students whose capabilities were not academic. Wholesale failure at the end of the first year leads to a great wastage both of university teaching and of potentially capable Category II manpower, and results only in swelling the ranks of so-called 'student' agitators. In the rural areas, the expansion of secondary education should be built round the social and economic environment, dealing with principles of co-operatives rather than with the cultivation of crops, and the mechanics of agriculture as well as its practice.

These are considerations of general application: in Viet-Nam they assume particular force since, as the demand for technicians will be of slow growth, it would be unwise for the output to exceed demand in any great measure. The demand itself must arise from the increased purchasing power of the rural population—it will certainly not come in any force from the over-sophisticated urban sector living under the artificial stimulation of foreign aid.

Two problems are specifically singled out at the university level, the first of which is the annual massive influx of poorly qualified students[2] who exert undue pressure on staff, laboratories, and the abler students who stay the course.

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[1] The argument is perhaps more appealing to the farmer than the citizen of Saigon.

[2] This situation, though it undoubtedly exists, as the ratios of enrolment to graduation in the various faculties clearly show, is not altogether easy to understand since

To meet this situation, Hunter reverts to his constant theme—the need to increase the supply of diploma (Category II) students, for which purpose he advocates the establishment of 'rural colleges', of sub-university standard, giving somewhat more 'modern' and applied courses (accountancy, commerce, survey, irrigation and simple agricultural engineering), basic mathematics, physics and chemistry, with a bias towards processing and rural industry, etc.[1] This solution is to be supported by post-grade 10 training for specific sub-professional occupations, presumably within industry.

The second problem, which may well contribute to the first, is the language situation, which remains confused and confusing to teacher and pupil alike. The matter is dealt with at some length in Noss (Volume III, part 2). Though most teaching at the secondary level is in Vietnamese, with the exception of some special or private schools teaching in French or Chinese, at the second-cycle level a student may take either English or French as a language of wider communication. At the university, while with the exception of the faculties of medicine, Vietnamese is used extensively, French is also employed for a number of courses, and proposals to make more use of English, at present mainly for reference work and special lectures, have been made. The average student, though skilled in the use of Vietnamese, cannot be assured that he will be able to follow his chosen course of study fully in Vietnamese at the university, especially in terms of textbooks, journals and reference materials which are generally either in French or English, and this may well be the cause of a great deal of student failure. It is also wasteful in the extreme, and a heavy burden upon textbook production, the training of teachers and the effectiveness of university teaching. Almost any firm policy would be preferable to the present uncertainty.

THE PHILIPPINES

Despite an elaborate government machinery and recent plans covering the private sector, there is in the Philippines no fully planned economy—it is primarily one of private capitalist enterprise, both in industry and plantation agriculture. However, in spite of the great wealth of Manila, the major land-

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although only the faculties of education and medicine have separate entrance examinations, the basic matriculation requirement is the *baccalauréat II*, which is the highest of the numerous formidable hurdles bestrewing the French educational course. Possible explanations are: the poverty and poor living conditions of students from the countryside, and their reaction to totally different living conditions in Saigon; the inadequate quality of teaching in science and the use of French in a large number of under-equipped and under-staffed secondary schools; the extremely high standard both of the best students and of university teaching; the unsettled future awaiting students, and the consequently easy step to political embroilment; and the language difficulties referred to below.

[1] This proposal is examined further in Chapter 9.

lords and the industrialists, the *per capita* income is only about half that of Malaya: there is a vast rural population quite untouched by the almost ostentatious prosperity of the capital. The 1962 population of nearly 30 million is growing at the rate of around 3.2 per cent a year; there are large numbers of unemployed, and larger numbers of under-employed. Thus the basic needs of the region—agricultural development, the decentralization of economic growth, the spread of services to rural areas and the provision of employment for those whose education has dissatisfied them with the opportunities afforded by a rural life—all these are to be encountered in the Philippines

The one factor in which the Philippines differs from the other countries of the region is the availability of a wealth of educated manpower. The general development of education, and especially the huge growth of private education on a purely commercial basis, particularly of private universities and colleges, both in number and in size, has brought a college education to almost 1 per cent of the entire population—a figure higher than that obtaining in the United Kingdom.[1]

In these circumstances the problems that arise are largely those of quality rather than of quantity, and major issues include the distribution of high-level manpower throughout the nation, and the optimum priorities for the investment of public funds in education. Qualitatively the planned investment in the development of heavy industry, based on iron and steel, and such activities as the possession of an atomic reactor, call for engineers and scientists of sound intellectual calibre and training at the highest level. In terms of distribution, well-equipped agriculturists and doctors have to be dispersed throughout the archipelago if standards of rural productivity and well-being are to be raised, whilst the steady seepage of engineers and doctors overseas needs to be stemmed. In terms of the investment of limited public funds, the choice lies between expansion and improvement; between the degrees of support to be given to the different educational levels; between science and technology on the one hand and arts and social sciences on the other.

The educational system

Detailed studies of the educational system, simple and bold in its outlines, but of the utmost complexity in its details, are to be found in the country profile, and in the report prepared by the Unesco Regional Advisory Team.

An attempt to give a brief quantitative account of the system, wisely avoided by Hunter, but desirable in the present context, invites disaster. Unfortunately the statistical background is obscured by the number of private institutions, particularly at the third level, the number of bodies responsible for the provision of data, various uncertainties as to the coverage of data (many university enrolment figures, for example, include the enrolment of pupils in their secondary and even in primary demonstration schools—but again they may not—and available data does not always make it possible to maintain a clear-cut distinction)[1] while institutions may offer a wide range of courses of different lengths and at different levels without making the necessary allowances in their collected figures.

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[1] It must be remembered though that this includes a level of education (grades 11 and 12) which in the United Kingdom and several other countries may be considered to form part of secondary education in the upper forms.

Elementary education. This covers a period of six years—four at the primary and two at the intermediate stage. It is frequently necessary to transfer children from a number of small village (*barrio*) schools to a Central Intermediate School, and this is a cause of heavy drop-out. In 1962/63 total enrolment was 5,088,000 (4,865,000 in public and 223,000 in private schools): in the previous year enrolment amounted to 93.9 per cent of the total population aged 7-12.[2] In 1962/63, the number of teachers was 134,900, and 73 per cent of the classes held between 30 and 49 pupils, while 20 per cent had less than 29. The pupil/teacher ratio had improved from almost 50 : 1 to 36 : 1 in 1951. As the public-private enrolments suggest, primary education is largely State financed.

Secondary education. In 1962/63 the total enrolment was 814,000, of which 527,000 or nearly two-thirds comprised pupils attending private schools which receive no government aid. The total enrolment represents 31.3 per cent of the 13-16 age group; and of this 738,000 were following a general secondary education, 76,000 a vocational education in arts and trades, agriculture and fisheries, all in publicly provided schools.[3] The proportion of vocational enrolments appears to be very low, but it will be remembered that the decision to attend these schools will have had to be taken when the child was aged 12, after only six years of schooling: it may well be felt that this decision is prematurely required.

In the public general secondary schools themselves an attempt is being made to bifurcate the course after the first two years, the option being either an academic programme which is in effect a university preparatory course, or a technical course: in 1964 only 27 per cent of the last two years' enrolment in the public secondary schools were taking vocational courses. The public

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1. A special effort to do so has been made throughout this report, and it may be assumed that this is one of the reasons why its higher enrolment figures for the Philippines are substantially lower than those of the Unesco Planning Mission.
2. However, since as in other countries of the region there are a large number of over-age pupils, this percentage drops to 79.3 if those pupils who are over 12 years old are not counted. It may also be noted that about half the children in each classroom are over the nominal age of their class.
3. To which a roughly estimated 5,600 might be added from private schools, as following some kind of vocational courses.

secondary schools offering a general education are all established and maintained with either provincial or chartered city funds, and there is little money to set up and operate adequately staffed and equipped vocational courses in each of these secondary schools.

Of a total of any 100 children who entered primary school in grade 1 in 1952, 15 may be expected to have entered the leaving class of a secondary school in 1961: about 85 per cent of those graduating from this fourth grade will have entered some form of higher education.

Higher education. Total enrolments in all institutions of higher education in 1959/60 were 276,290 in 416 colleges and universities, with nearly 88 per cent registered in private institutions. For 1962/63 the Unesco Planning Mission describes the enrolment and its composition as follows: 416,000 enrolments, made up of 50,000 in State universities and colleges, 17,000 in public vocational colleges, and the vast majority of 349,000 in private universities and colleges. These figures would however seem to include some secondary and primary university and college enrolments.

The provision made by the State is represented by (a) the University of the Philippines and the new (1962) Mindanao State University; (b) seven chartered institutes, autonomous bodies such as the Central Luzon College of Agriculture[1] or the Philippines College of Arts and Trades; and (c) 41 colleges such as regional vocational and normal colleges, the last of which are supported by provincial funds. Private universities and colleges are mostly profit-making bodies, in some cases reportedly paying a dividend of from 25 to 30 per cent on the invested capital.

A university is, under the supervision of the Bureau of Private Schools (a division of the Department of Education), required by law to include a post-graduate course, four-year undergraduate courses in liberal arts and sciences, at least three professional colleges, and a library, professionally administered, of at least 10,000 bound volumes. It also has to possess adequate grounds and buildings, 60 per cent of its staff must be in full-time employment, and its standards of work are assessed on the performance of its graduates in the government examinations, taken after graduation, which regulate entry into the professions.

None of the private institutions receives any support from public funds, and whilst a number of the universities are run by Catholic and Protestant religious orders, the majority of higher education institutions are run for profit on commercial lines.

Apart from the State University of the Philippines, with a 1963/64 enrolment of about 16,000, and private universities with enrolments ranging from around 2,000 to 40,000, most of the private colleges are comparatively small establishments, the enrolment generally varying between 320 and 700. Furthermore, at least a quarter of the colleges only offer two-year diploma courses providing commercial and other semi-professional training: they appear to bear, perhaps not unsurprisingly, a resemblance to the American 'junior college', but the term itself has no administrative significance in the Philippines.[1] The entrance qualification in the majority of cases appears to be the completion of a secondary education—though at least some faculties or colleges of private universities also hold entrance examinations—and, most important, the ability to pay fees. The colleges are not themselves subject to approval by the Bureau of Private Schools, but their degree courses are subject to recognition on a somewhat similar basis to the requisites for approval of universities, in particular the possession of a suitable library and 60 per cent of full-time staff teaching the course: the persistence of the library requirement is both encouraging and interesting though its implementation and even more the actual use of library facilities, leave much to be desired.

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[1] In 1964/65 given university status. A law for the establishment of a fourth State university has also been passed.

The two-year course is common to most institutions, and can play a very useful role in giving secondary graduates a further general education before specialized study or practical training on the job. There are, however, a large number of small private colleges where accommodation is overcrowded, equipment limited in the extreme, and most staff supplement their incomes not only from additional part-time teaching but also from various other occupations, particularly in business and commerce.

The distribution of students in the various faculties in 1961/62 and in major subject fields in 1959/60 is shown in Table 40—it is not possible, however, to distinguish between two- and four-year course students.

The massive enrolment in commercial courses is perhaps some indication of the urban orientation of higher education; the large numbers of teachers in training indicates that the pressure upon high-level manpower is so slight that all teachers, no matter what the level of their teaching functions, are required to be graduates: the very small number of students reading natural sciences indicates a considerable lacuna in the pattern of production. There seems a fair indication that apart from those who choose teaching—either as a vocation or as a safe if unspectacular career—the majority of students are interested in occupations likely to provide incomes dictated by the incumbent's capacity, drive and acumen, rather than those offering security and a fixed salary.

Among the multiplicity of detail relating to enrolment in courses of various lengths at each institution (though the requirements for each specific qualification are the same), it has proved impossible to obtain a general indication

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[1] The number of and enrolments in these has, however, not been included in the statistical data for 1959/60 and, probably, also not for the 1961/62 faculty enrolments given in Table 40.

TABLE 40. Distribution of students by faculty: Philippines 1961/62[1] (related to 1959/60 enrolments)

Faculty	1961/62		1959/60 percentage of enrolment
	Number enrolled	Percentage of enrolment	
Commerce and business	100 600	34.5	*[2]
Teacher training	66 500	22.8	18.7
Liberal arts	41 000	14.1	*
Engineering and technology	30 700	10.5	15.3
Medicine and nursing	27 800	9.5	10.3
Law	11 000	3.8	*
Agriculture, forests and fisheries	5 200	1.8	3.4
Natural sciences	3 500	1.2	1.1
Literature and theology	2 800	1.0	*
Others	2 300	0.8	51.2
	291 400	100.0	100.0

1. The data for 1961/62 are taken from the Unesco Planning Mission: those for 1959/60 are the study's own, gathered through the collation of information from various sources, including individual institutions. Not included are secondary and primary enrolments. It may be that at least part of the difference in proportions is due to this fact; but not entirely because some of the 1959/60 absolute enrolments are higher than in 1961/62: agriculture, 9,373; engineering, 42,220; medicine, 28,450.
2. Asterisks indicate that the corresponding percentages have all been taken together for inclusion under 'Others'. The total for 'Others' thus reached compares closely with the same kind of total of 54.2 per cent for 1961/62 arrived at by totalling the same heads.

of the relationship between enrolment and graduation (a relationship which, oddly enough, it is singularly difficult to trace throughout the region). In 1960 at the University of the Philippines, with a total enrolment (higher education only) of 11,875 students, 1,556 graduated from four-year courses, 52 from shorter courses, 90 master's degrees were awarded, and there were 120 graduates in medicine, dentistry and veterinary science.[1] Similar figures for three of the chartered colleges, also for 1960, show that at the Central Luzon Agricultural College (with a total enrolment of 1,611) 196 students obtained a first degree, 3 a second degree and 441 graduated from shorter courses; at the Philippines College of Commerce with an enrolment of 4,983, there were 53 graduates in teaching and 954 from shorter commercial courses, whilst at the Philippines College of Arts and Trades, with an enrolment of 1,750, there were 153 graduates and 202 other students who passed shorter courses.

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[1] Figures at the disposal of the study do not permit a comparison between these totals and the corresponding first-year enrolments (largely in 1956).

Manpower implications of the educational system

Hunter lists four (here broken down into five) main manpower implications of the educational system:

1. The Philippine undergraduate entering the university has only ten years of schooling behind him, and he may be only between 15 and 16 years old.
2. Overcrowding in many colleges is preventing adequate teaching.[1]
3. The provision for science teaching in the secondary schools is generally poor, minimal or non-existent. Accordingly, good science teachers are rare.
4. Standards of attainment in the private colleges are in many cases quite low.[2]
5. There is a huge wastage, and still considerable over-production in some fields—for example, in 1961 private college courses, 41,926 students were studying engineering and technology, but the complete national stock of registered engineers was only 14,115. Similarly in commerce and business there were 82,375 enrolments for graduate courses, but a stock of only 7,088 certified public accountants. The college training is academic rather than practical, and those who fail to enter at the professional level for which they are being trained are by no means likely to secure work, or prove successful, at the technical level—'a poor graduate is not a superior technician—in most cases he is not a technician at all'.[3]

Indeed, an inquiry into unemployment among those with a secondary or higher education in 1961 showed considerable unemployment at both levels, including an estimate of 35,000 graduates looking for work. This possibly takes no account of graduates in forms of employment for which a degree was irrelevant such as the legendary graduate taxi drivers of Manila.[4] There is certainly both a surplus of candidates to jobs, and too many candidates who have missed the opportunity of following a practical training and wasted time following poor professional courses.

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[1] The problem is not peculiar to the Philippines, as students at the Sorbonne would testify.

[2] In 1962, in the paper in international law set to graduates seeking a government qualification to enable them to practise, less than 6 per cent of 4,600 graduate candidates obtained the pass mark, whereas 90 out of 100 candidates from the University of the Philippines passed.

[3] A somewhat different point of view is adopted by Professor T. H. Silcock, late of the University of Singapore, who, in *South-East Asian University* (Durham, North Carolina, Duke University Press, 1964) comments: 'The disadvantages of the present system are, of course, obvious: students tend to become mere technicians, with too little knowledge of how to think; . . .' (p. 52). This is possibly a just description of the result of the teaching process in many colleges, but it may also explain why Category II training is not so eagerly sought! Professor Sinco, former president of the University of the Philippines finds this a comparatively just evaluation.

[4] But it would be interesting to see how many of these graduate taxi drivers, after a few years, end up with a business of their own. Again, a taxi driver earns more in most countries of Asia than a teacher—this may possibly be true of America, too!

The implications behind these difficulties, of course, go far beyond the single problem of manpower. Among others are:

1. The need to develop graduate schools and studies beyond the present statutory requirement for recognition. The Jesuit Ateneo de Manila has established a reputation for research and publications quite out of proportion to its comparatively small student body (5,000 in 1961), but its entry is highly selective.
2. The question of what measures to take to lengthen the educational span.
3. The problem of the possible expansion of vocational education at the secondary level. Elements in this situation are the excessively large numbers of pupils receiving an academic education, but, on the other hand, the very early age (12) at which at present the choice has to be made, the cost of developing vocational education if it is to be effective, and the fact that the bulk of secondary education is in private hands.
4. The low standards of accommodation, equipment and staffing (part-time staff paid by the hour) in many private colleges.
5. The question of whether a selective entrance system could provide a desirable and workable resolution of the disadvantages of low standards and over-production.
6. The imbalance of the distribution of enrolments in different fields of university study: as the 1961/62 figures in Table 40 show, about 54 per cent of enrolments were in commerce, law and literature, whereas enrolments in engineering and technology, natural sciences, medicine and agriculture account for about 23 per cent (or 30 per cent for the 1959/60 calculation).
7. The need for machinery to co-ordinate the activities of the various universities—the Bureau of Private Schools can, at best, do little more than check the qualifications of teachers and the extent of available accommodation, equipment and general facilities.

A review of some of these factors concludes the survey, but this is preceded by an examination of the manpower situation in certain key fields.

Particular requirements for high quality manpower

Industry. Organized manufacturing (five workers and over) accounted in 1960 for less than 3 per cent[1] of the labour force; agriculture for little over 60 per cent. It is estimated that an output of 400 fully qualified engineers[2] together with 200 physical scientists, would meet the country's needs until 1975.

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[1] The 1959 figure for the percentage of the labour force in the total area of industry and mining, however, was 12 per cent.

[2] This apparently requires to be interpreted as post-graduates by Philippine standards; for the 1960 output of engineers amounted to nearly 2,500 (grade 15). However, it also seems low in comparison to the 1975 output of 450 suggested for Thailand, which is a far less industrialized and industrially expanding country.

Agriculture. On the basis of one field worker (Category III) to each five of the 27,000 *barrios* in the country a stock of about 6,000 workers would be required, supervised by 1,500 Category II field officers under the direction of 600 full-time graduates for field research and policy problems. In addition to the graduate field staff, Hunter, on a now familiar basis, recommends three times the number of graduates for research in botany, plant pathology, plant genetics, soil chemistry, animal husbandry, water control and silviculture. The staffing thus envisaged in the early 1970's would be:

	Field force	*Background*	*Diploma and junior staff*	
			Field force	*Background*
Agriculture	600	1 800	1 500	6 000
Veterinary	300	50	500	2 000
Forestry	150	50		
Fisheries	75	25		
Water, survey, geology	200	—		
	1 325	1 925	2 000	8 000
TOTAL	3 250		10 000	
Add teaching staff	500			
	3 750			

A stock of 3,750 would ultimately need an output of 150 per annum to maintain itself: to reach it (assuming, apparently, a stock of around 2,000 in 1963), an output of 250 per annum for the next ten years is required. The 1960 output of first degrees in agricultural subjects was nearly 800! What, according to Hunter, is needed is a supply of graduates of high quality and a sense of vocation, prepared to serve wherever they are sent.

A short additional note refers to various attempts to associate village development with agricultural, health and educational services (see below Chapter 6, p. 216-21). Experience in the Philippines, as in India, has shown that village level services are ineffective unless the village worker has confidence in and easy access to supporting technical services, which may have to be of a high order. This support must be channelled down to the village to emerge through a single unit, whether multi-purpose worker or development team. It is the view of those who regard a fully manned and equipped agricultural extension service as the essential element in rural development that the village agricultural assistant should function as a unit of this service. However, whether this view would also be fully endorsed by specialists in rural sociology or community development, both very much concerned with the full inter-disciplinary implications of rural development, is a matter for speculation and investigation.

Health services. The stock of doctors is given as between 10,000 and 13,000, with a doctor/population distribution of 1 : 700-800 in Manila and as wide a scatter as 1 : 10,000 plus in the remoter areas. The over-all figure for 1962 is from 1 : 2,900 to 1 : 2,230 according to the stock estimate accepted.[1]

In order to establish a ratio of 1 : 2,000 in 1970, it would be necessary, with a stock of 13,000 in 1962 and wastage of 4,000 by 1970, to reach an output of 1,400 to arrive at a stock of 20,000. Considering that the 1961/62 output of medical graduates was 1,300, this should not be difficult to achieve; but there also at the moment seems to be no method of inducing doctors to serve in the country areas—at least no method that would not be anathema both to opponents of socialized medicine and of a planned economy. By no means all who graduate are able to pass the State professional examination to qualify for practice in the Philippines, and many may continue to prefer to emigrate abroad where there are wider and more lucrative opportunities.

Hunter, therefore, suggests that the process be limited to raising the stock to 16,000 by means of an annual output of 875 and an over-all ratio, on the basis of a population of 39 million in 1970, of 1 : 2,500—actually a reduction in present output which should enable the medical schools to improve the quality of their teaching and their graduates.[2]

As a counter-measure, and to reach the rural population, it is suggested that the Philippines might consider the example of other countries and regions with a similar problem, such as Tanzania or the South Pacific, and establish, from the ample available resources, a wide field force of medical assistants while stationing the fully qualified doctors in major administrative centres with a hospital and full technical facilities.

The proposal is a bold one which merits close attention by all developing countries, particularly where communications are difficult and emergency action may often be necessary, as in Indonesia and the Philippines. The hurdles which would have to be overcome include providing the facilities for clinical training, and the objection which will undoubtedly be raised by the medical profession to accepting any part of such training as a stage in obtaining a full medical registration, thus robbing the new service of a great incentive to recruitment. It should not be impossible, by careful negotiation, to surmount this barrier[3]—particularly in the Philippines where the output

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1. An article in the centennial report of the Ateneo de Manila (a major private university) quotes the secretary-treasurer of the Philippines Medical Association as estimating the number of registered physicians in 1959 as a little over 13,000, of whom 8,200 were in active practice, with 3,500 in Manila and the rest distributed. The writer thus calculates a Manila ratio of 1 : 671, a ratio of 1 : 4,474 in the provinces, and an over-all ratio of 1 : 3,014.
2. This view may well be questioned; as in the Philippines medical studies already require three to four years more for graduation than any other field of study, and entrance to medicine requires a minimum of three years of college.
3. It is not practicable, in a general survey such as this, to develop this theme in relation to the medical problems of many of the countries of the region, but a study of the South Pacific Health Service, and its Central Medical School in Suva, Fiji,

of medical graduates, as distinct from annual registrations, is very high, and the qualifications of these graduates is well above that normally required of assistant medical field staff. It must, however, also be noted that precisely because of their high qualifications, these graduates may not be satisfied with a low Category I or high Category II assignment.

Teachers. A force of 20,000 (the 1961 stock for secondary and collegiate purposes was 34,000) which would supply full graduates both for higher education and for the second half of the secondary course needs an annual output of 800: this might be increased to 1,250 to allow for an improvement in quality and an expansion of provision. This target is well below present production (nearly 12,000 in 1959/60).[1]

Summary

To complete the number of high-quality graduates needed, the numbers recommended in the preceding sections will need to be doubled to include the needs of law, economics, accountancy and commerce, arts (other than teaching), and the sciences (other than those supporting agriculture and technology). Thus, the annual output of high-quality graduates would be: agriculture and supporting scientists, 250; engineering and supporting scientists, 600; medicine and supporting scientists, 1,000;[2] Teachers (collegiate and upper secondary), 1,250; other, 2,500; total, 5,600. These, it is stressed, are employment opportunities requiring high-level qualifications and training—not figures relating to the total output of students with nominal qualifications (which in 1960 numbered no fewer than 19,000).

In addition to these posts, an output of 16,000-20,000 high quality post-secondary trainees would be required each year—6,000 of them for primary teaching, the remainder for industry, commerce, agriculture and sub-professional posts. This output from the secondary schools does not include those proceeding to the university.[3]

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should amply repay economic planners. Apart from official annual reports and many passing references in travel literature, the service is sparsely documented. The writer, who had the honour of serving on the Council of the Central Medical School for seven years (as a layman and an educationist, not as a medical man) and who, with his wife, owes a great debt to the services of an assistant medical practitioner after a serious car accident in the bush eighty miles from the nearest township, is convinced of the immense value of such a service as an intermediate step in the establishment of a fully staffed medical service, always provided, which was not the case in the South Pacific, that the holders of an assistant's licence are able, after suitable experience, to proceed with ease and some acceleration to full medical certification. It is extremely difficult for a layman to follow or appreciate the medical arguments against such a practice.

[1] Again the assumption obviously is that these higher level teachers should also have higher qualifications than those they at present need to have, involving a total of at least 16 years of study against the current minimum of 14 years.

[2] Rounded lower and higher estimate average.

[3] But with the high output of graduates plus a large number of associates may be quite easily satisfied.

It is next suggested that the 'high quality' requirement is not attained by most first-degree graduates and that in view of the brevity of the total school course of 10 years, contrasted with 12 years in Singapore, Thailand, Indonesia and Viet-Nam or 13 years in Cambodia and Malaya (but similar to 10 years in Burma and 11 in India or the U.S.S.R.), the first three years of post-secondary education, which might be termed the 'collegiate' course, should be distinguished from a further three years termed the 'university' course, the whole extending a full educational life to 16 years. This springs from the assumption that it takes 12 to 13 years anywhere in the world to fit a student for entrance to any university of high quality—on the other hand there is no evidence that a Filipino graduate after 14 years of education (6+4+4) is in any way inferior to a Thai graduate with 16 years (7+5+4) or a Malayan also with 16 (9[1]+4+3).

Hunter proffers the following suggestions for re-organization as one of a number of solutions to a problem which is still the subject of investigation and heated controversy in Manila: (a) Consider the completion of a ten-year schooling as the entry point for junior commercial and technical training (i.e., practical training for Category III employment[2]). This defers, for three years, entry to the vocational high schools. (b) Require a further three-year 'collegiate' education before entry to Category II training as, for example, primary teachers, technicians, para-medical workers and agricultural field staff.[3] (c) Require an additional three-year 'university' education for a full high-quality Category I qualification.

This is certainly a more heroic remedy than the alternatives which are still being canvassed—the restoration of a previously amputated seventh year in the primary course, the introduction of a fifth pre-university year in the high school course, or the extension and development of post-graduate courses after the fourth university or college year.

None of these alternatives, it might be argued, goes to the heart of the matter: the first applies the remedy before the trouble has been adequately diagnosed, and the second is likely to benefit only the academic stream, while both ignore the confusion of varying standards in the colleges and universities. The third will produce an élite, but do nothing to sort out the confusion of the first four university years.

Certainly the Philippines presents a striking example of the results produced by an education system which has been geared solely to social demands without reference to economic needs; and in a *laissez-faire* economy the situation has been exploited in many cases by stock-issuing educationists to an extent which demands a rather more sweeping reform than the addition, at one stage or another, of an extra year or two.

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[1] Primary six years plus comprehensive secondary three years.

[2] This, however, contrasts with graduates of grades 12 to 13 elsewhere accepted as qualifying for Category II posts—e.g., in Malaysia, Thailand, Cambodia and Viet-Nam, the entry point for Category II training is nine to ten years of schooling.

[3] As for footnote 2 above.

Whilst under the present system all university courses—whether at the University of the Philippines or at the smallest college with a recognized degree course in business administration—may be considered as running in parallel, the solution outlined by Hunter would extend them in echelon, so that the potential Category I 'high-quality graduate' would be required to undergo a six-year undergraduate course, the first three years of which do not seem, in the outline plan proposed, to be distinguished from a Category II collegiate course which still remains to be completed by an undefined period of training.

A further alternative would involve the bifurcation, rather than the extension, of the educational organization at its third level—with a common propaedeutic year at the commencement of all courses, at the end of which a selective procedure based upon records, interviews and a combination of testing procedures would allot those candidates who were unsuccessful to a Category II training, should they desire this, and select for Category I training, to last for four more years, the best 6,000-7,000 students. The remainder would be allocated to Category II courses, the academic content of which would cover a further two years but which might well in a number of fields include practical training and therefore cover a longer period. The awards at the end of the two- and four-year courses might be distinguished by pass and honours degrees, or even by bachelor's and master's degrees. Horizontal transfer would be desirable through all these stages, and postgraduate work would also need development.

Doubtless the patterns outlined in this report have been discussed before with all their permutations and combinations along with a dozen other possible solutions: the ultimate answer or developing approach must depend upon a detailed knowledge of existing institutions in the country, and its educational and political climate. What appears to be of final importance is that the solution adopted should take sufficient account of present needs and future demands of economic development for the assessment of both the quality of education at the third level and the claims that higher education has upon the public purse, in relation not only to primary and secondary education, but also to adult education and the development of the rural community. The social demand for education, which has resulted in the development of higher education beyond the capacity of the teaching force —and without regard to future employment—has generated a situation in which the laws of supply and demand appear to have little validity. The flow should surely not be dammed, but diverted into courses which will be of joint benefit to the individual, to the community, and, after all, to the shareholders of those colleges which, to a very large extent, have eased the financial burden of expenditure upon third-level education which would otherwise have fallen upon the general taxpayer.

Regional summary

The general conclusions of this survey were subsequently summed up by Guy Hunter in a paper on 'Training for Industrial Development' prepared for the 1964 Cambridge Conference on the Role of Industrialization in Developing Countries. 'In South-East Asia as a whole there is not really a shortage of higher education in relation to the opportunities for employment at this level (save in Malaysia, where university output is still too low). There is, however, a considerable maldistribution. First, the university provision tends to outrun provision for technicians—there is sometimes a proportion of one university graduate to two technicians instead of about 1 : 4 or 5. Secondly, there is maldistribution between arts and science. Thirdly, there is a maldistribution between agricultural and industrial training, in which agriculture is far too weak. Finally, in almost every field, preparation for economic life tends to stop at the university degree or technical certificate. The over-riding need is to turn academic graduates into practical managers and technicians. I believe the most important issue for discussion is this—how to provide the opportunity after technical education, for practical and guided experience in the real conditions of production, commerce and administration. The development of very simple, practical, unpretentious, applied management training, for young adult managers after two or more years of experience, and the development of technical refresher courses and "Service Units", may both contribute towards an answer.'

Accordingly, the number of new institutions, or indeed faculties, recommended by Hunter is small, save in the case of Malaysia, where in addition to the group of institutes in Sabah and Sarawak ultimately envisaged as coalescing into the University of Eastern Malaysia, a new Malayan university is recommended in the Penang-Ipoh region, and possibly a second on the east coast of Malaya. Additional technical institutes are also recommended for Singapore and Malaya.

In Cambodia the fusion of the existing faculties into the Royal Khmer University should be completed before it is decided whether the complex should further develop its own faculties, or whether additional provision should be made.

Burma is seen as requiring either a third technical institute or the expansion of the technical institutes at Rangoon and Mandalay. Greatly increased teacher-training facilities—possibly four residential colleges—are proposed for middle-school teachers.

Thailand is already making the more generous provision of doctors suggested, on account of the cost, rather hesitantly. Greatly enhanced facilities for teaching the natural sciences are also strongly recommended.

On the whole, however, enrolments are at the level which should supply an adequate output of high-level manpower until 1970. The difficulty lies in high wastage rates and inadequately educated and trained graduates. The key to this situation lies not in additional institutions, but first in raising the standards of secondary-school teaching, a major responsibility for training colleges and schools of education: a co-ordinated approach to this problem, under university leadership, has been recommended elsewhere in this report (p. 59-60 and p. 248-57). In addition to this prerequisite, it is necessary to take a major step to eliminate wastage by requiring a selective entry to universities —a form of entry by competition, not by basic qualifications. Finally, consideration must be given to three internal problems: the efficiency of university teaching, the availability of texts and laboratory facilities, and the general welfare of the undergraduates, including some form of tutorial supervision and counselling.

At the secondary level there are again high wastage rates, which also may be ascribed in part to poor teaching, lack of counselling, difficulties of language and an inadequate supply of textbooks; in part to a concentration on university preparatory courses at the expense of the large majority of pupils for whom the course is terminal.

It is at this level that Hunter introduces a difficult element in the training situation—the adequate preparation of Category II personnel, men and women who have had a total of nine to ten years of schooling[1] followed by two or more years of vocational training—technicians (an elastic term), non-graduate teachers, second-level staff in agricultural extension, business executives below top management or in small firms, fully trained nurses, senior clerks, assistant surveyors and similar personnel. These should be trained in the proportion of from 3 : 1 to 5 : 1 in relation to graduate stock.

There can be little doubt that national studies of needs, training facilities and output at this level are badly needed, particularly because, although the supply of trainees is easily located in the top forms of the secondary schools, the subsequent process of training is distributed far and wide between technical institutes, teachers' training colleges, small hospital courses for medical auxiliaries, nursing schools, farm institutes and colleges, in all of which full-time training is given; or in evening classes or day-release classes where theory and practice are undertaken under two different sets of conditions; or by survival on merit in the world of commerce.

One of the major questions arising from this confusion is what are the factors leading to a determination to enter any particular form of training, and at what stage, and by what means, does a student become either a Category II or a Category I candidate?

The maldistribution of recruitment to universities and diploma-granting institutions will probably not be solved until incentives to enter technician-level training are strengthened. If terms of service for primary school-teachers, agricultural field staff and similar personnel were substantially improved in accordance with 'the obvious needs of a modernizing society, students would have an incentive to enter the intermediate technical training institutions, secondary teachers' colleges.... These would become the new avenues to positions of high pay and status. Parents and students would exert pressure to expand and improve these avenues'.[1]

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[1] Though Hunter sometimes seems to take this requirement further to include no less than a total of 12 to 13 years of schooling, particularly in the case of the Philippines.

This is perhaps a little facile. It has already been suggested that the raising of salaries is a type of incentive which is likely to snowball, and the cost of substantial salary increases for Category II workers would undoubtedly be made at the expense of other educational developments. 'High pay and status'—but where status is employed as an incentive it is too often a substitute for high pay: the Japanese title of *Sensei* is indeed an honourable one, but also a compensation for extremely low remuneration.

It is not that there are not sufficient applications for the few Category II training institutions, but rather that pressure will continue for the development of more university education rather than for the development of technical training at the post-secondary level. Something can be done with terms of service, but the major incentive should surely be a clearly discernible path to promotion and Category I status by a combination of meritorious service, experience and subsidized opportunities for further study. With this path clearly marked out it should be possible for the secondary schools to exert considerable influence—if again they will, as they should, consider vocational guidance a vital aspect of their functions—on recruitment to the various types of available training at the right moment in a student's career.

Hunter has advanced a step further in this study of Category II training by suggesting, without elaboration, that diploma-granting colleges with a rural and applied bias in country areas could solve a large number of training problems and assist in the essential and very difficult task of distributing trained manpower throughout the countryside.

This is an attractive picture—the rural education base, a combination of Cambridgeshire village college, Danish folk high school, and farm institute. It is also a very expensive one, since it would involve the provision of residential accommodation and a very expensive staff/student ratio as a large number of skills would have to be taught to small groups of students.

Nevertheless, it is possible to conceive, here and there in the countryside, institutes affiliated to the universities, serving a multi-purpose function as a nucleus of research into agriculture, rural sociology and economics, literacy, rural health, oral history, and basic construction and water engineering, able to continue training functions with operational research, and possibly maintaining a training wing for this purpose. Certainly the association of a group of Category II trainees with such an institute would supply the needed incentive. Thailand, which has already gone to the extent of experimenting with the residential training of community development teams numbering five experts, and similar specialized training for rural teachers expected to develop their school communities as well as their schools; or the Philippines, with their experience of *barrio* development and the machinery for educational research now developing on a considerable scale at the University of the Philippines, might wish to explore further the possibilities of some such scheme.[1]

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[1] F. H. Harbison, 'Human resources development planning in modernising economies', *International Labour Review*, Vol. LXXXV, No. 5, May 1962. But, one must add, only as a good second choice, which at best amounts to the conclusion that it is better to be a first-rate technician than a second-rate arts graduate. Anyone who feels he has ability will first try to make the top grade and turn elsewhere only when all else fails.

The alternatives to this perhaps somewhat idyllic concept are (a) an extension of the principles of 'sandwich' or 'day-release' training to a wide variety of occupations, using or building—in or near provincial centres—technical institutes for the purpose, or (b) the establishment of multi-purpose colleges with a wide variety of courses somewhat on the same principal as a rural teachers' training college.

Hunter also feels that it would be useful if national or regional committees could be established to determine the training needs and ensure that *ad hoc* training, on the appropriate scale, could be given in those occupations such as laboratory technician, radiographer, tourist agent or wholesale buyer, where the demands are not frequent, but pressing from time to time—yet not justifying the establishment of regular courses. The main objective is to delay specialized training until after the basic secondary school course.

The summary concludes with a synopsis of the manpower targets established in Hunter's country studies:

'The rough table below shows the present position and the suggested targets for total manpower in Categories I and II, and the proportions of the high-level force to total population.... The figures shown for 1962 in the table must be regarded with caution by the administrator—they would certainly *appal* the statistician, since they are often based on very rough approximations. But they set certain orders of magnitude. They are, in one sense, fairly conservative: if economic progress is maintained they would not, I believe, involve any country in serious over-production at university or secondary level. In another sense the university targets for doctors and teachers are high in relation to existing faculties and possibilities of expansion. Malaysia will still be short of university graduates in 1970 and should need a total university enrolment of over 20,000 by 1975 in five or six university institutions. Burma, the Philippines and Indonesia will all have a tremendous task in building firm standards of quality; Thailand in building up two new university institutions; Cambodia in consolidating the great leap forward of the last five years and establishing a single, strongly led university. I believe,

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[1] The concept is further discussed in Chapter 9, p. 316-17.

Country	Stock	Output per annum		Percentage stock per population
		University[1]	Secondary[2]	
		1962		
Burma	60-80 000	2 260	(8 000)	0.26-0.35
Thailand	100 000	2 900	12 000	0.35
Malaysia	130 000	1 000	12 000	1.38
Indonesia	440 000	(2 750)	50 000	0.45
Philippines[3]	...	...	...	...
Viet-Nam	...	(500)	(7 500)	...
Cambodia	...	(50)	(550)	...
		1970		
Burma	165 000	4 000	15 000	0.6[4]
Thailand	256 000	4 500	31 000	0.7
Malaysia	274 000	3 500	25 000	2.0
Indonesia	1 100 000	9 500	120 000	0.9
Philippines[3]	650 000	5 500	20 000	1.7
Viet-Nam	...	...	...	...
Cambodia	...	...	...	...

1. The university outputs are assumed to supply 80 per cent of Category I.
2. The secondary outputs are taken, where possible, at year 12: in Burma at year 10: in Viet-Nam and Cambodia at the first *baccalauréat*.
3. No 1962 figures are given for the Philippines because it is impossible to know the quality of the output. The 1970 figures are based on a calculation of the number of 'high-quality graduates' from universities and from the twelfth year of education respectively who might be needed to man the Philippines economy.
4. 1972 target.

however, that no lesser targets would satisfy the determination of South-East Asia to strengthen the force of educated men and women who must provide leadership in the following decade.'

6. Social development and higher education

'Economic development is much too serious to be left to economists'[1]

The three previous chapters have discussed at some length the economic development of the countries of the region with some reference to the role that education, and more particularly higher education, can play in this process. This role is basically that of training the high-level manpower needed not only for specifically productive fields such as the applied sciences, engineering, architecture and agriculture, but also for administration and the public services, banking, management, and professions such as teaching and health, without which the economy cannot function.

In this context the university has been seen primarily as a professional training institution with a major emphasis on preparation for the higher professions.

A liberal exposition of this point of view is presented in the 1948 Carr-Saunders report on university education in Malaya, a source of considerable relevance to this study: 'In our view, it is a proper function of universities to prepare students for entry into the higher professions; . . . It is only common sense to hold that those who have enjoyed a prolonged education at the expense of the community should, as the outcome of it, be able to render special service to the community, and the method of performing such service is nowadays mostly by exercising some high professional skill. But it is not enough to arm graduates with the ability to exercise such a skill; it is also the aim of a university education to enlarge the sphere of interest, to sharpen sensibility, to quicken perceptivity, and to deepen sympathy. In other words university education should be liberal as well as vocational, general as well as special. It is the essence of our view that there is not insuperable antagonism between the special and the general, the vocational and the liberal, in the sphere of education.'[1]

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[1] G. N. Mair and R. E. Baldwin, *Economic Development*, p. 119: after Talleyrand (New York, 1957).

This might perhaps be described as a vocational concept with strong cultural overtones—it remains to be seen whether such a compromise will emerge from the new University Education Law (1964) of Burma: 'Chapter III: Objectives. The objectives of the universities constituted under section 3 shall be as follows: (a) to produce technicians who will participate in constructing Burmese socialism; (b) to produce scholars capable of promoting socialist economy, administration and social welfare; (c) to impart knowledge with emphasis on arts and science subjects that would equip a student with professional ability; (d) to engage in research work that would contribute to the success of socialist construction; (e) to impart knowledge that would equip a student with a mentality and moral character that are in consonance with socialist mode of thought; (f) to teach the student that there is dignity in labour, and to train him in this spirit; (g) to take measures that would ensure a constant advancement in the knowledge and skill of the working people who are engaged in the construction of Burmese socialism.'[2]

These objectives may at first sight appear to be either limited or unacademic: there is, however, a very practical relationship between them and the problems of a newly independent and underdeveloped country. The university is given a major role in creating a national identity through practising the concepts of Burmese socialism, and its graduates are seen as technicians engaged in the construction of a new society. Research is applied, and teaching is concentrated on the acquisition of useful knowledge and skills, and on the promotion of the political and economic ideology of the State. There is

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1. *Report of the Commission on University Education in Malaya*, p. 11 (Kuala Lumpur, Government Printer, 1948).
2. Chapter III of Law 9 of 1964 promulgated on 29 May 1964—Government of Burma translation. These objectives seem to be very close to those of the U.S.S.R. Education Statute of 21 March 1961 in which the basic aims of higher education are set out as follows: '(a) The training of highly-qualified specialists brought up in the spirit of Marxist-Leninism to be well skilled in the developments of recent science and technology, both in the U.S.S.R. and abroad and in practical matters of production, who should be able to make use of modern technical knowledge to the utmost and be capable of themselves creating the technology of the future. (b) The carrying through of research work which should help in the solving of problems of the building of full communism. (c) The making of textbooks and other aids to study of the highest quality. (d) Training higher education teachers and researchers. (e) To furnish advanced training for specialists in different departments of the economy of the U.S.S.R. and its republics, in pedagogics, the arts, and in the health services. (f) The dissemination of scientific and political knowledge among the people. (g) Study of problems of the best employment of graduates and of their proper training.'—*Vestnik Vysshey Shkoly* (The Higher School Herald), quoted in *Communist Education*, p. 177, ed. E. J. King (London, Methuen, 1963).

   Points which are not taken up in the Burmese law are familiarity with intellectual developments abroad, two specific references to pedagogy (c) and (e), the training of teachers for higher education, the development of the arts, and the study of manpower problems (g). The dignity of labour is stressed in the Burmese law—it may be assumed to permeate the Russian law.

little freedom of choice, and higher education is entirely introverted—there is no explicit indication that the universities are expected to take their place in the international world of scholarship. Emphasizing this policy the Minister of Education, Colonel Hla Han, in an inaugural address to a seminar on higher education held at Rangoon in April 1964, condemned the idea of 'education for education's sake' and the liberal concept of education under which freedom in choice of subjects was claimed and maintained.

It is perhaps to be expected that the opposite point of view is to be found strongly entrenched among Philippine educators, working in a *laissez-faire* economy in which a humanist tradition may be expected to flourish.

Thus, in his convocation speech on assuming the office of President of the University of the Philippines in March 1958, Dr. Sinco said: 'More and more the nation needs men and women with the right university training, men and women capable of thinking for themselves through habits of study and self-education, which fit them to meet their personal problems and to contribute to the solution of the current problems of the community. They are the men and women to whom people could look safely for assistance in times of confusion. Level-headed, tolerant, and intellectually balanced, they do not claim to have all the answers and to know all the questions. Without arrogance and pretension, they are ready to admit ignorance in cases where fresh and novel problems are presented and likewise ready to study solutions or to submit themselves to those who are better prepared to give the right answers. The more numerous graduates of this type our university produces, the greater is the likelihood that the country will rise to greatness —socially, politically, economically, and spiritually.'[1]

Again the national image is present, but the emphasis has changed: the stress is on the contribution that the individual can make to the community, not by what he does, but by what he is. The student emerges as a personality rather than a unit of human resource material.

Dr. Sinco is approaching, but not in such exclusive terms, the humanist concept of the élite, and the social validity of education. In *Essays of a Humanist* for example, Julian Huxley considers that out 'neo-technic' industrial civilization is adversely affecting the educational process in subject areas, in content, and in methodology: he sees the earth and life sciences, botany and biology, displaced by the physico-mathematical sciences, the curriculum planned with a view to its examinability, and teaching confused with mechanistic aids. Consequently he puts forward a plea for a union of education and genetics to supply an élite of young men and women to meet the challenge of technology to life, meeting the criticism of the neo-democrats with the dictum that 'nature is not egalitarian'.

Here, the Marxist and the humanist concepts are, as it were, polarized, but it will be the purpose of this chapter of the report to assess the social and cultural values current in the region which are likely to influence or be influenced by higher education before attempting a reconciliation or an integration of these functions with the economic task of providing the necessary high-level manpower for development.

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[1] V. G. Sinco, *Education in Philippine Society*, p. 31 (Quezon City, University of the Philippines Publication Office, 1959).

THE EXPANSION OF EDUCATION AS A SOCIAL DEMAND

The major factor which dominated educational expansion after the close of the Second World War was not economic—it was the concept of education as a fundamental human right. This received practical expression in the general formulation of universal compulsory and free primary education as a global goal. Unesco undertook a number of studies in this field[1] and one of its first major projects centred on the planning of primary education in Latin America.

The first essay at regional educational planning in Asia, the 'Karachi Plan', adopted this goal, based upon a compulsory course of seven years, and a span of twenty years for its attainment. It is relevant to note that the plan does not attempt to justify its cost by a disquisition on the investment potential of education, but by the following simple statements:

'The countries of the Asian region have been striving intensively, for some years in the past, to bring about the over-all economic and social development of their peoples and to provide them with a decent minimum standard of living which would be comparable with that of the advanced nations of the world . . .

Great and laudable as this progress is [i.e., the previous drive towards universal primary education] the people of the region are not satisfied with it and there is a keen desire everywhere to accelerate expansion and to provide a system of universal primary education, comparable in quantity and quality to that already established in the progressive countries of the world. . . .'[2]

This is at least an unequivocal statement of a social aim which reflects very fairly the intensity of the desire for education common to the whole region, though perhaps the emulative stimulus of the last contention is not entirely conducive to dispassionate planning. The motivations behind this demand were various. Education was the key which would unlock the door leading to technological progress, the clue to the high living standards of the West. It was the prerequisite of social mobility. It was the missing ingredient in the former colonial recipe for progress to self-government. It was the way of escape from the labourer's hoe to the clerk's pen. It was, to the politician, the means of enlisting an illiterate under-employed peasantry in the army of a fully active labour force. It was a way to open men's minds.

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[1] For example, *Compulsory Education in South Asia and the Pacific* (Paris, Unesco, 1954); and country studies for Thailand; Philippines; Cambodia, Laos and Viet-Nam; Indonesia; all published in the Unesco series 'Studies on Compulsory Education'.

[2] *The Needs of Asia in Primary Education*, p. 8 (Paris, Unesco, 1961. Educational Studies and Documents, No. 41).

This impetus to education remains, but today the approach is more sophisticated, and the impact has been broadened under the pressures created by the initial development itself, a growing realization that the whole educational process, from infant classroom to university laboratory, involves a cycle of learning, training and teaching which must be complete to be effective, and growingly insistent demands from developing economies for sub-professional and professional personnel in all fields.

Indeed after only two years a meeting of Ministers of Education revised the Karachi Plan to cover all levels of education, a pattern already adopted by their African colleagues in formulating their Addis Ababa Plan in May 1961.

Now the educational objectives are seen not solely as the means of meeting the aspirations of the illiterate millions, but in a larger relationship to various specific needs of society:

'The Karachi Plan . . . embodies national desires to create the necessary conditions for full democratic growth. Such schooling provides the true base for the location and selection of a nation's talent and as such is the foundation of the educational pyramid. It also provides the literacy and knowledge necessary for the full exercise of democratic rights and responsibilities and has been recognized as a basic right in the Universal Declaration of Human Rights. In addition such schooling makes a major contribution to economic growth permitting a more rapid spread of understanding and application of science and technology.

'The implementation of the Karachi Plan demands that attention be given to other levels of education for the training of the required teachers, supervisors and administrators. Indeed the quantitative and qualitative improvement and extension of education at the secondary and higher levels is of the highest importance to countries in the Asian region if they are to achieve their prime objective of providing an adequate standard of living for their people through a programme of rapid industrialization and the application of modern scientific and technological knowledge and processes to agriculture and other aspects of national life. For such progress to be accomplished a range of skilled workers, technicians, engineers, administrators and other personnel is needed who must be trained at the secondary and higher levels.'[1]

This is the background against which the development of education at the third level in Asia must be seen: it is the organization and development of the process which will prepare students for education at the third level, from whom in turn the further development of the first two levels will be generated. The cycle must be completed.

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[1] *Report of the Meeting of Ministers of Education of Asian Member States Participating in the Karachi Plan*, p. 15 (Bangkok, Unesco, 1962).

This growing pressure of popular demand for education is illustrated by Table 41 which shows the enrolments at the first two levels, and their ratios to each other, at three critical periods[1]—at the height of the colonial period in 1939; at the attainment of independence, where the situation has varied according to the fortunes of the particular country during and after the war; and in 1960/61 when the results of national drives to develop education systems were beginning to show.

Among the points which emerge are the growth of secondary education in relation to primary education, though the ratio between these remains low, ranging from 22.6 per cent in metropolitan Singapore or 16.1 per cent in the Philippines to 3.7 per cent in Laos. These ratios still compare most unfavourably with India's ratio at the same period of 60 per cent and can stand no comparison at all with Japan's 80 per cent. The Karachi Plan estimated that the over-all regional ratio in 1959 was 26 per cent (for the whole of Asia) and the costing of the expanded plan to 1980 was made on this ratio, together with an estimated ratio of 100 : 2 between primary- and third-level enrolments.

Table 41 also shows the havoc wrought by war on secondary education in Burma,[2] the considerable development of education in Indo-China during the last years of French domination, and the great achievement at both levels of the Philippines and Indonesia, where the ratios give no indication of the vast numbers involved in the development of the system.

THE SOCIAL IMPLICATIONS OF NATIONAL PROGRESS

This great upsurge of education has not only begun to transform the productive potential of the populations of the region—it is creating a favourable climate for the realization of the social and political implications of independence[3] and the consequential growth of national identities linked with modern concepts of progress and welfare.

The needs thus engendered are in general common to all levels of education—it will be expected, however, that they will make the greatest demands at the apex of the educational pyramid.

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[1] See also Table 3, p. 38.

[2] It has proved difficult to account for the very high ratio of approximately 67 per cent between secondary and primary education in Burma in the pre-war years. The primary course lasted for only four years, the secondary course for six and it can only be assumed that this disproportion, together with an initial large entry into the middle school at the beginning of the fifth year (accounted secondary), is the explanation.

[3] Even the Philippines and Thailand, emerging from the Japanese occupation after the war, shared in the regional blossoming, despite their special situations.

TABLE 41. Growth of education in the region at the first and second levels, 1940-60[1]

Country and year[2]	Primary enrolment	Percentage of secondary to primary enrolment	Secondary enrolment			
			Total secondary	General	Vocational	Teacher training
Thailand						...
1940[3]	2 004 298	6.1	122 252	100 060	22 192	2 046
1954	2 937 534	9.7	284 389	245 689	36 654	
1962	3 771 308	9.1	342 819	294 482	37 024	11 313
Burma						
1939	384 060	66.8	256 706	233 543	25 163	...
1948[4]	449 577	4.1	18 593	17 588	1 005	...
1961	1 528 000	14.6	223 194[5]	...	...	...
Laos						
1940	7 482	...	...	...	...	...
1954[4]	41 201	3.0	1 258	1 210	28	20
1961	100 000	3.7	3 725[6]	2 954	240	540
Cambodia						
1940	58 114	1.3	760	445	315	...
1954[4]	243 385	2.0	5 037	4 620	417	...
1961	588 527	4.7	27 492	24 591	1 733	1 168
Viet-Nam						
1940	...	...	...	...	...	...
1954[4]	490 251	9.0	44 309	43 000	1 056	253
1962	1 450 679	18.7	271 663	264 773	4 618	2 272
Malaya						
1947	452 927	5.7	26 007[7]	24 081	1 926	...
1957[4]	...	...	138 236	122 785	10 413	5 038
1960	1 104 570	15.7	166 496	152 124	7 628	6 644
Singapore						
1951	128 499	...	...	...	...	...
1957[4]	...	...	37 385	36 257	1 128	...
1962	318 643	22.69	72 308	68 931	3 377	...

Sarawak						
1945	27 985	...	...	...	...	...
1954	47 543	11.28	5 365	5 245	...	120
1961[4]	...	...	...	...	...	...
Sabah						
1939	9 412	...	...	...	...	...
1954	23 306	8.56	1 994	1 858	20	116
1961[4]	...	...	...	...	...	...
Indonesia						
1940	1 879 270[8]	3.0	56 235[9]	22 964	33 271	...
1950[4]	4 977 304	2.8	139 353	79 363	27 263	32 727
1961	9 600 000	11.1	1 064 375[6]	845 642	95 020	123 713
Philippines						
1940	1 922 738	5.3	101 855	77 144	23 483	868
1946[4]	3 102 206	5.1	157 888	137 893	17 607	288
1954[10]	3 303 372	6.9	228 832	183 693	45 109	30
1961	4 435 038	16.1	713 083	655 565	57 194	324

1. The figures for 1940 and 1954 have been taken from Volume II (primary) and III (secondary) of Unesco's *World Survey of Education*, where a much more detailed statistical analysis of trends is available. The figures for 1960-61 are taken from *Education in Asia* (first edition) published by the Ministry of Education, Japan, 1964, in collaboration with the contributing countries, Unesco and ECAFE. For comparative reasons gaps have not been filled in from other sources since both sets of tabulations quoted have been made upon the principles laid down in Unesco's *Manual of Educational Statistics*—unhappily not a process universally observed. It is for this reason that the figures in this table do not always correspond with figures in Chapters 2 and 5.
2. The positions at (a) the outbreak of the Second World War; (b) on the attainment of independence; (c) the latest available date.
3. A similar basis is adopted for Thailand, which has, of course, always been an independent State.
4. The year of independence.
5. Secondary figures for 1960.
6. Secondary figures for 1959.
7. Secondary figures for 1949.
8. An estimate.
9. Secondary figures for 1939.
10. In view of the early attainment of independence in the Philippines, figures are also provided for 1954 for comparative purposes.

Naturally, there is considerable overlap in any attempt to classify the situations in which these needs arise—but broadly they may be grouped as sociological, political, cultural and individual: within these categories again are aspects of either general or specific significance. Thus, under the general sociological heading there is the overwhelming influence of change, and particularly of the rate of change, in the newly emergent societies, and this involves such phenomena as social mobility; the frequent breakdown of the extended family as the predominant social group; the gradual emancipation, especially in the predominantly Moslem areas, of women; and a growing equilibrium in the provision of education between the sexes. These factors again become apparent in the major problems raised by the disparity of circumstances and needs between urban and rural populations in the emerging countries, and the attempt, within the concept of community development, to enlist the rural as well as the industrial labour force in the army of progress.

Politically the new rulers are faced with the problem of being required to produce a literate and effective electorate without losing the political power they gained under the stress of emotional as well as rational circumstances. They have the task of creating, within their plural societies, a national identity and a national image, a process in which language appears to be the most popular tool, and this image has to be propagated in international circles.

Associated with this concept is the search for, the preservation and the transmission of, the national cultural heritage—a policy which is perhaps more deliberately undertaken in Africa: Asia has an ancient consciousness of its own cultural patterns and achievements, diffused and confused though these have sometimes become.

Finally, there is the relationship between this national efflorescence and the future of the individual man, consciously or unconsciously seeking the good life, which is rapidly becoming the full life, and enjoying the satisfaction of seeing his children experience a flowering that is being nourished by the spread of educational opportunities opening before them.

Some analysis of these factors is attempted in order to identify what are their implications for higher education, and the adjustments that will have to be made to meet them.

It may well be argued that social change—or adaptation—is a prerequisite of economic development, and that the influences of education have to be brought to bear upon the conservatism of tradition and the cramping effects of a constricted social order before newly aroused energies can be channelled into efficient productive channels.[1]

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1. This view would not be acceptable to C. S. Belshaw who has stated in a Unesco working group paper: 'My contention at this point is that social structure does not in itself either inhibit or promote economic growth. It does, however, have an important bearing upon the forms of organization for economic growth which are

The position is developed at length by Professor Rostow in his well-known analysis of economic growth,[1] in which he calls the first two stages (a) the traditional society and (b) the pre-condition for take-off.

The traditional society Rostow sees as one in which food production absorbs 75 per cent of the labour force, and in which the limits of technical expertise result in the accumulation rather than the development of the inventive capacities of the people. Income, apart from subsistence cultivation, is spent on non-productive activities such as war, ceremonial and monumental architecture. Control of land means control of power, despite the efforts of any central authority that may exist, and social mobility, though not vertically impossible, is rare.

The second stage, the path to economic take-off—a sustained industrialization in particular areas, is marked by three elements: (a) a strengthening of the social infra-structure by developments such as feeder roads or other ways of facilitating transport by which the products of the countryside can be brought to market and, incidentally, the forces of law and order can be brought to the countryside; (b) a series of technological advances in agricultural production; and (c) an expansion of imports to permit the expansion of industries, the exchange for which would be made available by the export of natural resources.

These developments must be based upon social factors—the understanding and co-operation of the agricultural producers, the creation and operation of a group of entrepreneurs (presumably either in private enterprise, as in the Philippines or as civil servants, as in Burma) and a government capable of appreciating the social investment necessary.

Socially this is seen as bringing the people to realize that choices are opening up to them in a future offering a wider range of consumption, new equipment in their work, and a longer life to their children.

In the colonial situation, which naturally has a primary significance for South-East Asia, Rostow's 'reactive nationalist sentiment' plays a major role: the intrusion and the success of the advanced powers with their technological skills have offended and affronted national dignity. The ultimately successful reaction of the national élite to this situation is not immediately constructive, since power politics do not tend to attract the new governments to the

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appropriate in given circumstances. Thus, if economic planners can identify the principles of co-operation and adaptation which are inherent in their society, they should be in a position to mobilize these to provide vehicles for organization. To do otherwise would be to overlook important creative potential, and perhaps to engage in unnecessary schism and controversy, diverting attention away from the real issues. It is not necessary to turn a matrilineage into a patrilineage or to create a nuclear family before economic growth can take place, and to attempt to do so may delay the take-off for a considerable period of time.'—*Expert Working Group on Social Prerequisites to Economic Growth, Kyrenia, Cyprus, April 1963*, p. 1 (Paris, Unesco, 1963).

[1] W. W. Rostow, *The Process of Economic Growth*, second edition, Chapter XIII (Oxford, Oxford University Press, 1960).

social tasks of modernization. Hence economic take-off is impossible until there is a full concentration of the national consciousness and national energy towards attaining the goals of economic growth.[1]

The Rostow stages do not consider the situation of developmental imbalance which is a marked feature of the region: thus the economy of Singapore, whilst not dissimilar to that of Hong Kong, is a somewhat isolated feature of the region. But it is an illustration, though lacking the significant feature of a vast surrounding agricultural setting, of the wealth, stage of development and social facilities of the major cities of the region—notably, of course, the ports and capitals. These offer a challenging and at the moment disquieting contrast to the developmental stage of their hinterlands as, on a wider scale, do Java or Southern Luzon to the outer islands of their archipelagos.

For the rest the basic economy of the region, as reviewed in Chapter 4, answers to Rostow's concept. It remains agricultural, though in most cases this has risen above the level of subsistence farming. The landowner is often, in the case of Malaya and Indonesia, a plantation-owning company, though rural settlement schemes in both countries are creating a new class of producer. Social mobility remains comparatively limited but the development of secondary education for children from rural areas has drained off a number of the most able who have found their way through the urban secondary school to the metropolitan university, and who cannot be prized out of their urban environment.

Of Rostow's second-stage requirements, the development of all forms of transport is evident—major highway programmes undertaken with foreign funds and machinery, feeder roads built through local self-help—and, in the case of emergencies, the air-lift. Agricultural production and marketing are being encouraged through the development of extension services, agricultural credit, community development schemes, marketing agencies and co-operatives. Exports of primary products, save in the case of Indonesia, are mounting steadily. Many light and some heavy industries are being established, though it may be that in a few cases this process has been premature.

In all these circumstances it appears sound to apply Rostow's criteria for the approach to economic take-off to the region, (a) the strengthening of the social infra-structure, (b) the education of the agricultural producers—that is, mass or community education, particularly in the rural areas, the training of an élite capable of producing the entrepreneur (and incidentally the manager), technical advances in agriculture implying both the development of technical education and the prosecution of research, and (c) the planned use of foreign aid to promote the activities thus contemplated. It is a formidable educational programme, but the ground has been well prepared for it

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1. In its application to South-East Asia the picture here drawn may be compared with the stages of human resource development calculated by Harbison and Myers, using a composite factor index. F. Harbison and C. A. Myers, op. cit., p. 31-48.

by the initial impetus to educational development which has been discussed above. Whilst it is fitting that in this context it should largely be a wide rather than an intensive programme, spread over the rural areas, it makes considerable demands upon higher education in terms of the development of technology, the training of teachers, the pursuit of research, not only scientific, but also sociological, and the creation of a body of administrators capable of appreciating the social foundations of development, and of the many implications behind it, such as, for example, the necessity for a basis of social justice, one of the elements not always accounted for by the planners. There is a major significance in Galbraith's comment on the developmental process: 'Even the most eloquent agricultural extension expert cannot explain the advantage of growing two grains of wheat where but one flourished before if the peasant knows full well that both will go inevitably to his landlord.'[1]

SOCIAL MOBILITY AND SOCIALIZATION

Three elements may be further stressed in this review of the social background to development—the social re-adaptation of peoples organized in traditional groupings, the spread of access to education among girls and women, and the engagement of rural communities in increasingly productive activities extending beyond a subsistence level, and including the resolution of large-scale seasonal or other underemployment.

The organization of society to provide flexibility in human relationships is widely stipulated as an essential element in development, whether it be to effect the adjustments required in order that rural communities can move away from the restrictive decision-making process of traditional (and conservative) authority, or to develop a sense of belonging among the many new agglomerations of industrial workers. The point is developed by McClelland.[2] '... coming to value the opinion of the "generalized other" as it is reflected in the mass media, tends to promote the shift of one's loyalties away from traditionalistic norms which in many backward countries impede rapid development. If a man is bound by a caste system, or by a near exclusive loyalty to his kin group, or to a set of other-worldly religious goals, he is likely to act in "maladaptive" ways so far as generalized economic goals are concerned.... What the data suggest is that those countries will develop most rapidly which succeed in getting such people to pay attention to new norms dramatized in the newspapers, in local political party meetings, or on the radio.' As an instance of a traditional norm outliving its functional effectiveness, McClelland cites the example of land fragmentation by inheritance, which in the past may have served to avoid dissension and, in

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1. J. K. Galbraith, *Economic Development in Perspective*, p. 9 (Cambridge, Massachusetts, Harvard University Press, 1963).
2. D. C. McClelland, *The Achieving Society*, p. 193 (Princeton, New Jersey, D. Van Nostrand, 1961).

difficult times, to keep the family together, but which now is wasteful and inimical to modern methods of cultivation.[1]

The danger of developing a series of functional relationships based upon specific mutual needs is that no new social structure may be established to replace the traditional one. McClelland here considers that the 'generalized other', i.e., public opinion, as expressed by the mass media of communication, can serve as a major form of social control, and even assist, in the economic sphere, in the creation of a 'market morality'. On this hypothesis the significance of the mass media rests not only in expressing and circulating public opinion, but also in assisting to form it—the creed, for example, of Sir John Reith in the early days of the British Broadcasting Corporation—and is clearly a field both for research and teaching in higher education.

There is another aspect of this situation which the anthropologist will be quick to point out. It is no light matter to tamper with the bases of an established society. Social authority and discipline are just as necessary to economic progress as a flexible society, particularly in nations which are suffering from the withdrawal of colonial authority and some breakdown of cohesive social values.[2] At this stage a conflict is likely to develop between political concepts of equality and the discipline needed to promote priorities in economic growth, and it is here that the global controversy between the right of access to higher education and the necessity to limit numbers in order to provide high quality and intensive training makes itself felt. Few of the new governments are in a strong enough position to advance the argument that at this stage of development the needs of the developing country require the sacrifice of quantity to quality in higher education, yet with limited resources there is no escape from the necessity of determining on one policy or the other.

Social change in the region is reflected in the social mobility implied by the opportunities afforded for 'upward mobility' through the education system, the source from which the personnel of government, the political parties, the professions, the business organizations, the services and the trade unions find their key personnel. In a lower strata the movement from the rural to urban areas has certainly resulted in mobility, but possibly in a horizontal plane and there may be traces in the countryside of a 'downward mobility' among those who are unable to accept or stand the pace of agricultural development. 'Collective mobility', a shift in the position of an entire stratum, is less easy to discern.[3] It is possible that mobility directly linked with economic status is more marked in societies where there is no aristocracy of birth; nevertheless in most countries an academic context to an occupation gives it a social status unrelated to its economic significance, a factor which may well have accounted for the recruitment difficulties—before Robbins—of the English colleges of advanced technology. The economic prospects for their graduates appeared to be much more attractive than for those of more academic disciplines, but many potential candidates nevertheless preferred the prestige of a 'real' university, even if built of redbrick. The relationship between social mobility and the universities is a close one.[1] However, throughout the region, social organization is moving—largely through the channels of education—from a basis of adscription through the accident of birth to a status conferred by achievement and based upon skills and competence—a combination of ability and educational attainment. The initial social order derived from the largely Indian-administered empires and States bordering the South China Sea, in which an aristocratic élite in the few but concentrated cities controlled and subsisted upon the labours of a large rural population of low status. In this hierarchy, Hindu conceived, the merchant class, despite its wealth and economic expertise, held a social rank inferior certainly to the administrator and warrior and perhaps often also to the *vaisayas*,[2] the farmers, and it may be asked whether this situation does not account for the fact that even now in a society basing itself more and more upon achievement, the tendency is still to seek mobility elsewhere than through the openings in industry and commerce that the growth of the economy demands.

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[1] But see note on C. S. Belshaw's views on p. 204 of this chapter.

[2] Professor Hla Myint has contributed a paper, *Social Flexibility, Social Discipline and Economic Growth*, on this point to the Unesco Expert Working Group at Kyrenia. The twenty working papers of that meeting are all, of course, relevant in some measure to the point under discussion.

[3] A curious example is afforded by the scaffold-erectors of Hong Kong, whose social as well as economic advance may be contrasted with the decline of the thatchers of East Anglia in England.

Education is certainly not the sole factor in social mobility—ability and motivation are essential elements—but it opens up the major avenue of social advancement for the underprivileged section of society. Nevertheless, whilst economically the direction of the shift—both at the sub-professional and professional level—should be toward the occupations of engineering in all its forms, teaching, social sciences and the various commercial fields, the tendency is still to opt for the traditional and more lucrative fields of law and medicine, or the socially acceptable and secure fields of government service where prestige rather than profit is the incentive to recruitment.

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[1] This theme is treated more fully in a paper by S. M. Lipset prepared for the Unesco Expert Working Group. See notes on pages 204 and 208.

[2] The illustration, an illuminating one, is taken from a paper by B. F. Hoselitz, another of the presentations to the Unesco Working Group on Social Prerequisites to Economic Growth. Hoselitz cites the authority of T. W. Rhys-Davids' *Buddhist India* (first published in London, 1903)—perhaps not the happiest source for an evaluative interpretation of Hindu society in what appear to be the eighth and seventh centuries B.C. W. W. Hunter, *The Indian Empire* (London, Trübner and Co. 1886) somewhat confuses the issue, since there it is stated that the *vaisayas* were in ancient time the tillers of the soil but that 'they have abandoned this laborious occupation . . . and are now the merchants and bankers of India' (p. 196). On the other hand, A. C. Mayer, *Caste and Kinship in Central India* (London, Routledge and Kegan Paul, 1960), quotes the proverb 'highest is agriculture, in the middle is trade, next is service, most worthless is begging'. He also states (p. 75): 'Both the trader and the craftsman depend on farmers for their livelihood and so, say the latter, their work is inferior.' Van Leur, *Indonesian Trade and Society* (The Hague, 1955; p. 98), denying that the traders were the 'supreme disseminators' of Hindu culture, places Hindu traders 'in the lower social group', though in a footnote he later distinguishes between the small but wealthy merchant patriciate of the cities and the great majority of traders. Were it not for the appositeness of a parallel specifically drawn from the region it might have been preferable to have restricted the illustration to an impeccable reference to the position of Japanese merchants under the Tokugawa Shogunate.

Thus the goal of the mobile student is still likely to be a traditional one, and the assets of an enlarged pool of high-level manpower tend to be squandered on occupations which are not adding to economic productivity—a situation which is encouraged by the fact that enrolment opportunities in the arts and social sciences are generally wider than in the scientific and technical fields in terms of admission requirements, part-time study, length of course and, in some cases, lower standards of performance. In Indonesia, where the need for the development of abundant skilled resources is desperate, 'what is wanted through education is prestigious position in public administration'.[1] An inquiry in the Philippines among high-school seniors gave the following careers in order of preference: medicine, commerce, teaching, government service.[2] A Burmese view of the situation in the region as a whole corroborates these views; 'the main motive of the parents who send their children to the schools and of the students who crowd into the universities is to obtain well-paid (preferably official) jobs after graduation'.[3]

Despite Dr. Hla Myint's hopeful qualification of 'well-paid', after all not an unreasonable incentive towards meeting the considerable cost of a higher education, it seems that on the whole the aura of the post is more important than the actual financial reward, as Solosoemardjan (op. cit., p. 374) discovered in Indonesia where the clear financial advantages of technical education offered little incentive to those seeking government jobs.

The situation is perhaps best illustrated by reference to agricultural education at the third level. At one time, despite the almost totally rural nature of the economy, one of the African universities had fewer students than faculty members in its school of agriculture. The Indian Council of Scientific and Industrial Research[4] reported in 1963 that of 2,600 agricultural scientists, 90 per cent were in the public sector, less than 1 per cent were engaged in farming or farm management, and less than 3 per cent in practical farming, or the food and dairy industries. Within the region itself, in the Philippines, of the graduates of the College of Agriculture, University of the Philippines,

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[1] Solosoemardjan, *Special Changes in Jogjakarta* (Ithaca, Cornell University Press, 1962). But it should perhaps be added that most administrators supplement their meagre incomes through a second occupation—perhaps commerce or teaching. This double activity is made easier by the fact that all public offices, starting work at around 8 a.m., come to a compulsory closure not later than 2 p.m.

[2] Castillo, *Occupational Evaluation in the Philippines*, 1962.

[3] Hla Myint, 'The universities of Southeast Asia and economic growth', *Pacific Affairs*, Vol. XXXV, No. 2, 1962, p. 122.

[4] *Technical Manpower Bulletin*, Vol. V, No. 10

34 per cent were found to be engaged in technical agricultural work, 45 per cent in education, and only 8 per cent in actual farming.[1] Again, 'In Thailand a survey made of 125 chemists of whom 85 had foreign degrees indicated that slightly more than half were serving as administrators in positions totally removed from chemistry. In Indonesia a study made by the writer of the first 900 alumnae from all the faculties during 1952-60 from Gadjah Mada University showed that of the 85 per cent who entered government service, some 70 per cent were working as administrators in fields in which 45 per cent of these graduates had not received training.'[2]

A striking result of this general attitute is to be found in the regional role of the middle class, which normally occupies an anomalous and not very significant position in largely adscriptive societies. In a society in which a small élite controls a large agricultural population of low social status the position of a middle class attained by educational attainment and economic performance may be precarious, but in the circumstances that have been outlined it becomes the first and most obvious source of supply for the production of all those occupations scorned or avoided by the socially established and socially mobile, the entrepreneurs, the managers, the technocracy and the technicians. The frustration of this class which, despite achievement and wealth, seldom reaches political leadership or high social status is a factor of considerable significance when it is appreciated that in the cities of Thailand, Malaysia[3] and Indonesia, the stratum is large, growing, very wealthy, and dominated by the Chinese.

Clearly the universities have an important part to play in the whole area of social mobility and the flow of graduates into those sectors where trained manpower is most needed. There is little evidence that salary incentives are likely to exercise a major influence on occupational choice, and in any case such a policy might well snowball in terms of occupations not so favoured. The sound organization and high quality of teaching and equipment in the unpopular subjects in the universities, together with a strong emphasis on vocational guidance in the secondary schools, are likely to have an effect which would at least contribute to the effort which will have to be made by politicians and the social élite if the optimum use is to be made of human resources trained at considerable expense to the country, which is, after all, entitled to a reasonable return on its investments.

THE CHANGING STATUS OF WOMEN

The political emancipation of women in South-East Asia is a constitutional fact, their social freedom is broadening fast, their access to educational opportunities is now largely a matter of logistics rather than principle.

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[1] S. Roxas, 'Investment in education: the Philippines experience', *Philippines Economy*, Vol. II, No. 1, p. 32-9.

[2] J. Fischer, *Minerva*, Vol. II, No. 1, Autumn 1963, p. 52.

[3] Singapore, of course, has to be, from the nature of its population, excepted from this generalization.

This social phenomenon is sometimes overlooked in educational planning operations: housework and the production of children are not regarded as economic activities, and there is a tendency to interpret the term 'manpower' too literally. The free and equal access of women to education is both a right and a political necessity, and no quantitative exercise in planning can afford to calculate enrolments and the supply of 'places' without an appreciation of the necessity for educating girls as well as boys, women as well as men.

The West tends to have a curiously distorted view of the social and intellectual position of women in the East, based more upon romantic fiction and the film than upon appreciation of the significance and eminence of Mrs. Pandit or Mrs. Bandaranaike, or the history of the Perikatan Perempuan Indonesia,[1] itself based on the formidable All-India Women's Conference, perhaps the most potent single body for social reform that the world has known.

In fact, in all the countries of the region women have the right to vote in national elections, and indeed to be eligible for election on equal terms with men. Thailand was the first South-East Asian country to establish this principle in 1932, closely followed by Burma and the Philippines in 1935—the other countries established this right as one of the first fruits of independence.

This major constitutional achievement has been based upon a twofold process: (a) a more humanistic approach to the social conventions which have traditionally hampered the social emancipation of women in the East (though in this matter a distinction must be drawn between, on the one hand, the predominantly Christian Philippines and the Buddhist countries of Burma, Thailand and Indo-China and on the other the Moslem territories of Malaya and Indonesia); and (b) the growing provision of educational facilities for girls, which owed much to the concepts and devotion of missionaries from the West, and from the Western approach to the same problem, which slightly preceded similar movements in the East.

The process is of course by no means complete. In all the countries of the region[2] there coexist enlightened and traditional views on the role of women in society. As might be expected this conflict is most marked in Moslem communities where customs such as *talak* (divorce by the thrice repeated oral declaration of the husband before witnesses), or the seclusion of purdah, are not extinct and in Indonesia have long been the subject of attack by the Women's Congress.

The social code in the Buddhist countries is much more relaxed: the nun holds a recognized rank in the Buddhist hierarchy—albeit the lowest—and a great deal of petty trading and marketing has always been in the hands of women. No major organized attempts to form women's movements have been made in these countries.

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[1] Indonesian Women's Congress.

[2] Here again the full generalization is dangerous: Burma has always allotted an equal status to men and women.

This process has been assisted by a number of other factors. The development of Western concepts of the practice of medicine has influenced the position of women in a number of ways. The advent of family planning has relieved many of them from an almost continuous pregnancy from the age of 15. There is no longer the same ever-present fear that babies are more likely to die than to live, with the possible outcome of ruined marriages and lack of support in old age. Moreover, modern medicine has created a wide range of opportunities for the appropriate employment of women as doctors, nurses, midwives, pharmacists, technologists, therapists, social workers in health and nutrition, and administrators. Nevertheless in Thailand the Government has thought it wise to restrict the admission of women to medicine and teacher training to 35 per cent of the total entry—not because of quality—but because women are still unwilling to serve wherever required, and the wastage rate is much higher than in the case of men.

Other factors in the situation have been the broadening of women's horizons by increasing opportunities for travel, and freedom to accept these opportunities (always available in Thailand and Burma)—the country bus has played an important part here—and by modern means of mass communication, particularly the cinema, and now television. The growing process of urbanization has also contributed, with its relief from the eternal physical demands of rural life, and by affording the opportunity for various forms of employment in transport and building, and in light industry.

In the slow development of literacy within the region, the men have always been ahead, through the wider range of educational opportunity afforded them in the past, and, save in the Philippines, the number of illiterate women remains distressingly high—94.7 per cent in the case of Cambodia.

That the situation is quite rapidly adjusting itself is shown by Table 42 giving the percentage of women teaching, and girls being taught, at the three educational levels in 1950 and 1961. It will be seen that the Philippines is employing more women teachers than men at both the primary and the secondary general levels, Singapore at the primary level. The figures show a marked tendency to relative equilibrium in primary education for both sexes, and a growing proportion of girls in secondary education, though the ratio of women staff is still not as high as might have been expected, save in Thailand and the Philippines. The figures for vocational education would seem to indicate that where there is vocational education for girls it is still of the traditional one-sex variety such as weaving or needlework, since there is a close correspondence between the percentages of women teachers and girl students: in the case of teacher training, this will be expected. The growing opportunities for girls in occupations such as the tourist trade, wholesale and retail distribution, commerce and administration, and in light industry (other

TABLE 42. Percentages of female teachers and pupils at the three levels of education

Country	Year	First level		Second level						Third level	
				General		Vocational		Teacher training			
		Women staff	Girls	Women staff	Girls	Women staff	Girls	Women staff	Girls	Women staff	Women students
		%	%	%	%	%	%	%	%	%	%
Burma	1950[1]	46	45	45	48	—	—	—	—	21	23[2]
	1958	33	47	36	33	—	—	61	40	...	18[2]
Cambodia	1950[1]	4	9	...	14	...	...	—	—	4	...
	1961	...	...	6	17	...	...	5	36	...	9
Laos	1950[1]	...	20	...	14	—	—	...	—	...	...
	1961[1]	...	36	...	...	...	9	19	25	...	8
Viet-Nam	1950	25	32	14[3]	24	—	1	—	49	4	17
	1961	37	40	16	33	2	2	25	21	9[3]	16
Thailand	1950	...	47	36	29	40	35	—	—	30	17
	1961	33	47	42	38	37	35	46	46	30	28
Indonesia	1950	...	...	...	...	...	...	...	...	...	...
	1961	...	44	...	30	...	...	...	49	...	...
Malaya	1950	26	33	29[1]	23	...	27	...	31	...	—
	1961	33	44	28	33	15	38	15	34	19	26
Singapore	1951	48[4]	33	...	30	...	—	...	...	...	26
	1961	52	45	34	40	41	50	—	—	15	30
Sabah	1950	29[4]	29	...	...	...	—	22	37	—	—
	1961	35[4]	39	29	36	—	—	...	...	—	—
Sarawak	1950	...	...	...	...	—	—	23	24	—	—
	1961	29	40	25	33	...	91[5]	...	...	—	—
Philippines	1950	...	...	...	...	39[1]	22[1]	...	...	...	...
	1960	74	48	66	47	36	38	..	...	45	51

Compiled from *Unesco Statistical Yearbook, 1963,* tables 11 to 15.

1. Public schools only.
2. University of Rangoon only.
3. Full-time only
4. Including all schools at second level.
5. Only 11 pupils.

than as machine hands) do not yet seem to have aroused a demand for vocational education of a broader type.

Table 43 shows a reduced proportion of women students in higher education save, again, in the Philippines. It has not been possible to match these figures with graduation figures. A study of wastage by faculty and sex, particularly if supplemented by studies of graduate employment at five-year intervals, would be of considerable service to university administrators. In Table 43, omitting for the moment the Philippines, it is clear that the least popular of the professions with women (or with potential clients?) is law, followed by engineering and agriculture. There is nothing very unexpected about this. The fairly low percentage of women teachers in natural sciences is probably due to the lack of adequate teaching provision in the girls' secondary schools.[1] Numbers in the Philippines are overwhelming—though this applies to enrolments rather than to graduates, who again in many instances, if graduating from a private university, have to satisfy government requirements before being licensed to practise their profession. Nevertheless it is clear that teaching is a major vocation for women in the Philippines. The fine arts loading is probably due to the reputation of the Philippine Women's University, with its specialization in folk-dance and its touring group, the Bayanihan. Medicine includes degree or diploma courses in nursing, midwifery, pharmacy, physiotherapy, public health and similar services, which accounts for its heavy female enrolment.

Within the region the enrolment of women in schools of agriculture is negligible, save again in the Philippines, where teaching courses in agricultural extension with a strong home economics background—home economics is normally, in the table under reference, grouped among the social sciences—account for the large number of students enrolled. It appears that there is still a source of employment here, in extension services and laboratory work as well as teaching, which is yet untapped, as well as unsought, in the rest of the region.

It is evident that the growing significance of the education of women revealed by these tables is a trend which is of vital importance in educational planning at any level, whether education is seen as a contribution to the mental, physical and spiritual development of one-half of the population or as a means of diverting to productivity new sources of trained human skills. In either event higher education has a major role to play, whether in teaching the techniques which will enable new forces of labour to be deployed in direct economic activity; in releasing skilled male personnel for tasks more appropriate to male characteristics; in providing the teachers to expand women's education; or in the social task of educating public opinion to accept and expect a widening view of women's contribution to the home and to the nation.[2]

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[1] Thailand is an exception.

[2] This topic has been explored exhaustively in *Women in the New Asia*, a symposium

TABLE 43. Education at the third level—distribution of students by branch of study

Country	Year	Humanities		Education		Fine Arts		Law	
		M	F	M	F	M	F	M	F
Burma[1]	1954	1 597[2]	869[2]	59	85	—	—	246	3
	1958	3 372[2]	2 210[2]	107	185	—	—	335	6
Cambodia	1956	—	—	—	—	—	—	212	1
	1961	—	—	—	—	—	—	424	3
Viet-Nam	1961	2 991	910	844	188	134	3	2 530	23
Thailand	1949[3]	45	308	—	—	73	8	23 531	37
Indonesia	1956	296	194	868	315	—	—	5 292	1 231
Malaya	1950[4]	192	57	—	—	—	—	—	—
	1961[7]	356	200	—	—	—	—	—	—
Singapore	1961	437	266	44	56	485	17	243	5
Philippines	1957	268	301	5 736	31 936	648	2 257	10 780	1 54

Extracted from *Unesco Statistical Year Book, 1963*, Table 16.

1. University of Rangoon and associated colleges only.
2. Social sciences included in humanities.
3. The figures for 1961 do not distinguish between the sexes.
4. Data for the University of Malaya in Singapore.

Finally, as a postscript to this section of the chapter, it would be inappropriate, writing in 1965, not to refer to the presence of women athletes from the Philippines and Malaysia in swimming, field and track events at the Tokyo Olympics. The final achievement was not, perhaps, outstanding, but the mere presence of competitors who had achieved the rigorous qualifying standards implies a wide background of school and adolescent sporting activities for girls and women in the participating countries.

THE EDUCATIONAL NEEDS OF A RURAL SOCIETY

Constant references have already been made in this report to the problems raised by the disparities existing between conditions of life in the cities and in the hinterland of every country in the region.

With the single exception of Malaya between 70 and 90 per cent of the population of South-East Asia lives in what each government describes as a 'rural area'. Indeed Malaya may well be included in this category too since there the population, avoiding the jungle areas, is only slightly more

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edited by Barbara E. Ward and published by Unesco (Paris) in 1963. Statistical information is also given in some detail in *Access of Girls and Women to Education in Rural Areas*, a global study in Educational Studies and Documents, No. 51, 1964, also published by Unesco.

Social sciences		Natural sciences		Engineering		Medicine		Agriculture	
M	F	M	F	M	F	M	F	M	F
...[2]	...[3]	2 698	450	398	—	577	304	75	1
...[3]	...[2]	3 573	710	965	6	973	410	50	—
—	—	—	—	—	—	164	18	74	—
—	—	50	6	53	2	301	12	—	—
65	10	3 167	451	225	—	1 752	754	147	12
151	1 062	615	384	468	8	436	376	302	—
372	442	882	469	3 148	97	3 499	1 059	509	22
—	—	104[6]	20[5]	—		388[6]	69[6]	—	
—	—	168	35	198	0	—	—	50	3
215	902	755	164	1 323	4	632	139	—	—
320	57 590	507	980	36 048	2 366	7 316	17 624	8 732	1 640

5. Including pharmacy.
6. Excluding pharmacy.
7. Data for the division at Kuala Lumpur only.

concentrated in small townships and mining communities as well as along the coastal plains.

This situation and the problems it engenders are not, of course, peculiar to the region. Of the total population of India, for example, 82 per cent lives in rural areas, of the Philippines 86 per cent, of Thailand 88 per cent, of Senegal 80 per cent.

It is difficult to find any bond other than that of sharing a new national identity linking the élite and the workers of the metropolis with the peasant population of the hills and plains beyond, yet each is dependent on the other. From the towns come leadership, law and order, planning and administration; from the fields and the plantations come the surplus products upon which the economy is based, a source of labour for new industries, and a slow but growing influx of ability to supplement and invigorate the intelligentsia of the larger cities.

The problems involved in this situation are many and intricate, including, to name only a few, the illiteracy of the rural population, the difficulty of the spread of services such as health and education, the development of internal communications, the formation of national opinion, the establishment of incentives for more efficient cultivation. Furthermore all countries are working on the basis of a dual economy. The urban and semi-urban sectors are operating on a cash economy whilst the rural sectors still function largely on a non-monetized self-sustaining basis, a situation changing only slowly as excess rural output finds its way to cash markets and the demand for basic consumer goods such as clothing, kerosene and bicycles rises.

The often canvassed method of improving rural standards of living by 'self-help', whether by contributed labour on feeder roads or by an 'each-one-teach-one' system of literacy campaign, offers but a limited answer to the problems involved, and the admirable policy of 'planning from below' requires more material support in the form of cement and equipment than the solicitous but sometimes detached advice of a 'village-level worker'. Any solution of the problem as a whole may be envisaged as requiring a combination of incentives, skills, material and technical assistance, and administration; but even this is to over-simplify the combination of factors involved.

In the first place there is the tenacious hold of custom and tradition—the conservatism of the farmer who does not consider increased production an adequate reason for changing his age-old practices and adopting the Japanese method of rice planting; or the reluctance of small village communities to merge into the convenient but artificial groupings of new administrative patterns for local government. There is a traditional division of field labour which entirely subordinates the educational calendar to the variations of the rice harvest. There are jobs done by men, and jobs done by women. There is a major reluctance to change food habits, whether to prevent tropical anaemia or to save a more valuable cash crop for marketing.

The concept of the agricultural co-operative is not the prerogative of the German or the Dane—groupings for planting and harvest, festivals and ceremonies are common throughout the East, but always in a traditional pattern working within a limited range. The evolution to the marketing co-operative is simple in theory but extremely difficult in practice, and the elementary book-keeping operations involved have proved too much for many a promising young farmers' group and fatal to the prospects of their unhappy secretaries.[1]

In the Buddhist countries the acquisition of merit is an individual matter, and communal planning for the future has little part in the philosophy of the village temple. Matters of life and death are accepted without reference to hygiene and medicine. Social security is established by the family, not by a government agency.

The position is no simpler with the material aspects of life. It could be argued that the development of a rural community is no more than the technical application of policies devised in the various ministries of government. This could be, but the result of such application is too frequently an ineffectual process: either the impact is so remote through distance, inertia, lack of funds or failures of organization as to be negligible, or it tends, under an ambitious administration or a wave of energy from the centre, to erupt in spasms of intense but short-lived activity.

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[1] *pace* Belshaw—footnote on p. 204.

Another difficulty lies in the seemingly innocent phrase 'various ministries of government'. Spheres of influence overlap. Even in India the process of community development did not include, financially and administratively, the 'social education' policy of the education authority, and it is still possible to find many a rural high school with an agricultural stream which has never been visited by the block development officer. The process is sometimes controlled by a committee at cabinet level, as in Thailand; sometimes by an *ad hoc* department, as in Malaya, sometimes through the prime minister's office, as in Viet-Nam. Always there loom two major vested interests, the provincial governor, or whatever official may represent the Ministry of the Interior/Home Affairs; and the specialized interests of the technical ministries; Health, Education, Agriculture and Forestry, Labour—and behind them the supporting international agencies, governmental and non-governmental including the Colombo Plan experts and the technical divisions of the bilateral aid organizations. All are pledged to co-operation—all by train-

TABLE 44. Initiation and approximate coverage of rural community development programmes by 1959

Year programme started	Country	Population (millions)	Villages (thousands)	Percentage of total villages covered
1948 : 1955	Burma (mass education): Payagy pilot community development project	1.7	1.7	6.0
1955[1]	Thailand	0.1	0.2	0.4
1959	Cambodia	0.2	0.3	3.0
1958	Laos	0.25	1.0	10.0
1957	Viet-Nam	8.0	2.7[2]	100[3]
1958	Malaya	0.04	0.15	1.3
1956	Indonesia	8.0	4.0	8.0
1956	Philippines	4.0	5.0	20

Source: extracted from *Community Development and Economic Development* (Bangkok, United Nations, 1960).

1. The source gives 1958: the Thai Unesco Fundamental Education Training Centre, however, was established in 1955.
2. Re-grouped hamlets.
3. The result of control by 'civic action agents' working to promote political security and civic education. The system later collapsed under the stress of political and military events.

ing and experience expect to receive co-operation spontaneously rather than have to generate and nurture it.

The villager, individually or collectively, prefers the familiar, and though he can be stimulated to quick bursts of energy, it is the most difficult task imaginable to sustain a steady drive toward development. It is possible, however, that the somewhat evangelistic approach of some community development workers, anxious to 'show results', and taught that a quick concrete return from initial projects is the first stage in establishing themselves, is to blame for this lack of steady effort. The immemorial rhythm of country life, whether in the paddies, the pastures, or the plantations, has a hidden dynamism that must be slowly nursed to generate its own momentum.

Into this delicate situation governments have plunged with multi-purpose workers, development teams, mobile cinemas, literacy campaigns, extension services, land settlement schemes and co-operatives. But '. . . the pattern of living in rural communities is not neatly compartmentalized into education, health, co-operatives, agricultural extension, village crafts and home economics, with village meetings every evening. It is a closely integrated, traditionally developed design for living in which almost every inhabitant is a multi-purpose worker, in which the children from school also tend the livestock, look after the babies and carry the water, in which the teacher too cultivates his food gardens (sometimes, perhaps, under the guise of agricultural education), in which the priest may also be the doctor, and the energetic young headman, recently elected, be in actual fact a neat cover for the group of elders, secluded from official contacts, who run the village and its affairs from the shade of a near-by mango tree. If the machinery of education, in and out of school, can co-operate in this elaborate pattern; if the village can be persuaded to take part in the management of its school and to send some of its children to the secondary school; if the educational unit is seen as the family rather than the child; if the new co-operative is not set up long before the bridge to carry the feeder road has been constructed; if the campaigns for afforestation, new school building, a clinic, more roading, better sanitation, cleaner house-plots, home gardens, Brahma bulls, weaving, the 4-H Club, a revival of traditional dancing, co-operative marketing, the digging of deep wells (all, of course, heralded by visits of experts armed with questionnaires and cameras)—if these are merged with the village pattern as an extension of its past and a development of its present, then education will at last have taken strong root in the soil of the country, instead of superimposing upon it a little comprehended and urban system whose effect is likely to be as ephemeral as the careers of those to whose prestige its isolated institutions will have been occasionally erected.'[1]

The picture is perhaps etched too deeply, but it is difficult to trace any

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1. H. Hayden, *Decentralization for National and Local Government*, Annex II, p. 114-15 (New York, United Nations, 1962).

basic developments in operational methods, techniques and organization since the days when Unesco first started its campaigns of fundamental education in 1948. The terminology has been more subject to change than the practice.

Into this imbroglio, which has been described at considerable length in view of the significance of the rural situation in the development of all the countries of the region as a whole, this report now proposes the introduction of yet another participant which has so far remained almost entirely aloof from the scene—the university.

The universities, whether too occupied with their own expansion, too remote in their ivory towers, or, most likely, preoccupied with their affairs in the heart of their respective urban centres (or at least at only one remove, as in the case of the University of Malaya, whose setting is idyllic, but whose affinity is with Kuala Lumpur and not with Perak or Kelantan) have shown little interest, save in the case of a few departments of economics, in the intricate groups of problems the countryside has to offer.

There are, however, signs that this urban isolationism is beginning to break down, perhaps more easily than in some European countries. The French students from the Midi, the Dordogne, Brittany or Alsace flock instinctively to the Sorbonne, to risk daily injury in the crush to enter packed lecture rooms, despite the technical innovations of Nancy, the linguistics and the scenery of Besançon, or the architectural splendours of Orleans. With even greater alacrity Thai students until recently flocked to Bangkok—to Chulalongkorn, Thammasat or Kasetsart—and once there it proved very difficult to extract and return them to the countryside to offer some service by way of repayment for the cost of a university education. Now the two new Thai universities have been established almost as remotely from Bangkok as possible, at Chiengmai in the north-west, and at Khonkaen in the north-east. At Khonkaen in particular the university has been specifically designed to develop both the region's agriculture and its agriculture-based industrial development.[1] Similarly, Indonesia is proceeding with the strengthening and consolidation of the State universities spread through the archipelago, and the second Philippine State university is situated on the island of Mindanao —scarcely a metropolitan setting despite its site in Marawi City.

The essence of the situation, however, is that the universities are in a unique position, with their potential for the organization of interdisciplinary research, to undertake the studies which have been lacking in every approach to community development viewed in its widest sense as a social and technical operation with an immense number of intricately connected facets.[2]

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[1] Basic details are given in the Thai country profile in Volume II of this study.

[2] The point is developed at length in Chapter 8, p. 274-82.

THE NATIONAL IMAGE

In assessing the contribution of education to social development attention has been given to the general demand for increased educational provision, the question of social mobility, the spread of educational facilities among women, and the relationship between education and rural development.

There remain the political and cultural aspects of development, and the need to establish or consolidate, not only in the wake of recent independence, but also in the face of rapid modernization and internal strains, both a national image for exhibition on the international scene, and the establishment of a sense of belonging and common purpose among the people of the country itself, however heterogeneous their composition and their objectives.

In this field of activity, much lies outside the scope of education. The policy of individual countries is largely a matter, at the moment, of leadership, and the personalities of the leaders of the independence parties have played an overwhelming part in making the world conscious of newly emerging forces.

Nevertheless, neither the external nor the internal affairs of an emerging country can be conducted perpetually from the summit, and the creation of a national civil service to replace the machinery of colonial government, and the substitution of indigenous for colonial professionals and technicians, has cast a heavy burden upon the exiguous existing sources of manpower at the highest level. Further, the establishment of a diplomatic corps, and the recruitment of missions of high standing and competence to attend the perpetual international conferences and seminars which appear to be an inevitable element of the conduct of affairs in a nuclear age, have further depleted these resources. However, the calibre of these missions, to individual countries, to the United Nations and its Specialized Agencies, to regional bodies, and to political groupings, is of paramount importance in conveying an impression of the strength of purpose and capacity of the nation thus represented.

The result of all this is that the deputies of the delegates are gaining what might have been valuable experience somewhat prematurely, that civil servants at the third executive level have also moved up, and that in consequence the calibre of staff who can be spared for intensive but fairly lengthy training overseas is lower than such training would warrant or the needs of the country itself prescribe. This does not assist the process of high-level training abroad.

The position internally has been in some cases eased by the initial retention of expatriate professional or technical staff (not administrators) or their substitution by similar staff with no obvious colonialist background. However, this is clearly a temporary measure, and the results of on-the-job training given by such technical assistance staff to counterpart colleagues do not always appear to have been very satisfactory—here again is a training situation in which specialists in research techniques might be able to make a contribution out of all significance to the effort involved.

Be this as it may, another responsibility lies fairly on the university, not only for the training of recruits to the services and professions, but for *ad hoc* arrangements for in-service training for senior and middle-level executives, and there is an equal responsibility on government to provide adequate funds to make the necessary staffing and accommodation available. It is, of course, easier to undertake basic training than to plan special courses, but the question at issue may well depend, not so much on the competence of the university to carry out this task as on the relationship existing between the university and government, which is perhaps an unhappily wide term to use in this context, since it may well refer to the chief minister himself. At all events it is essential for government to realize what the university has to offer, and is capable of offering, and in these circumstances it is probable that the initial approach might well lie with the university.

If the country's external image is depicted by her diplomats, her delegates, and, it must be added, by prestige symbols such as a national airline or an international hotel, it must be remembered that there is also an international world of scholarship of far-reaching significance, and that the work of a scholar, made known through university channels, is likely to convey an image just as successfully as the poise of a diplomat or the persistence of a delegate.

Internally, two factors are important—the adoption and development of a national language, and the preservation of a national culture. The two are, of course, closely linked. The significance of language problems is such, both in the context of the development of a national identity, and in the intimate relationship which they bear to higher education, that they have been selected for treatment in depth by one of the study's consultants, Richard B. Noss, a summary of whose findings forms the following chapter of this report.

THE CULTURAL HERITAGE

Of the significance of a nation's cultural heritage and aspirations the Director-General of Unesco, M. René Maheu, has said: 'As for culture, this is perhaps the most important field of all. It is a great mistake to regard culture as a luxury, a mere adjunct to more fundamental things. There is nothing more fundamental than culture for it is the source from which we draw the values governing our whole way of life. Those of you who have had contacts with developing countries have, I am sure, been impressed by the importance given to culture. Wherever I have been, people have emphasized the importance they attach to culture as a means of preserving the traditions of a past of which they are proud, and of maintaining the spiritual individuality of their country, nation or people. And finally, culture is what enables peoples in developing countries to assimilate and to make present-day history, and not merely submit to it.

'I will go even further: the most cherished and deepest wish of these countries is to be able, one day not far distant, to make their own contribution of new values to universal civilization. At present, they are engaged in the highly complex process of adjusting their traditional values, which they have sometimes forgotten, to the values of a scientific and technical civilization generally foreign to them, and which they must assimilate. It will only be when they can make a contribution from their own cultural values to mankind's heritage that they will achieve the dignity of true equality, for one is not equal as long as one always receives.'[1]

These aspirations have been particularly evident among the emerging nations of Africa, and at the Addis Ababa Conference in 1961 two papers on this theme were submitted. One, by Mr. J. Ki-Zerbo, of Upper Volta, dealt, not unemotionally, with the content of education in relation to African culture:[2] the other, by Mr. Paul Mercier, of the École Pratique des Hautes Etudes, Paris, is an analysis of socio-cultural factors and programmes for the development of education.[3] (It is perhaps no coincidence that both contributors on cultural matters are scholars trained in France.)

Mr. J. Ki-Zerbo sees two problems facing education—the 'Africanization' or 'de-colonization' of its approach and content and its adaptation to the situation in which a developing country has to catch up with the rest of the world in a cruelly limited time. In consolidating African values in education he finds that the main subjects to be affected are philosophy, geography and history, the arts, and languages—'to accept the death of the African languages would mean cultural suicide'. He looks to the education of girls (scarcely, one would have thought, a traditional feature of African society) to assist the process of Africanization and to a complete overhaul of textbook content.

To the Western tradition he still looks for the production of more 'science teachers, engineers, financial experts, economists etc.', a close contact between technical education and industry, vocational guidance, educational planning and the development of mass media of communication. This programme is regarded as an orientation of the old colonial programme to meet the needs of a developing and diversified economy.

The African tradition of education he sees as basically individualistic; 'the bush and initiation trained a man for procreation, production and warfare—in a word, for the life of society'. This concept must now be adapted to the needs of a general development programme.

Mr. Mercier, in a most lucidly reasoned analysis of cultural factors, identifies the two elements of 'the assertion of the African character' and 'modernization'; considering that the reconciliation of these two elements is the key to the whole problem. He sees the internal significance of Africanization in strengthening the cohesion and unity of the new country, and its external significance in establishing the country as an equal partner in world-wide cultural exchange, a process to be distinguished from the purely receptive role when European culture dominated development in colonial territories. In seeking to establish the balance that should exist Mr. Mercier stresses the need for the reorganization and analysis of existing documentation and the collection of field data, from *objets d'art* and photographs to recorded oral history and legend. Then must follow the adaptation of the fruits of research in developing both school curricula and also an approach to the people as a whole. The process involves a considerable training programme for research workers and the creation of *ad hoc* institutions.

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[1] In a speech to the Canadian National Commission for Unesco, 12 March 1965.

[2] *Final Report of the Conference of African States on the Development of Education in Africa*, Annex IV, p. 55-60 (Paris, Unesco, 1961).

[3] ibid., Annex IV, p. 81-9.

The particular involvement of the universities in this process is clear, and as may be expected the situation was examined with considerable care at the Tananarive Conference on Higher Education in Africa[1] which followed the Addis Ababa meeting.

It was there pointed out that the Africanization of the content of education is a partial rather than a wholesale process—that, for example, an African significance can be given more easily to history, geography or sociology (and surely botany and medicine might well have been added) than to physics, mathematics or astronomy.

It was further postulated that whilst evidence of the African cultural heritage should be assembled, preserved and made known, it should also provide the basis for the emergence of a living culture developing from a continuous process of creation.

The establishment of institutes of African culture within the universities was recommended, as was the creation of one central clearing house and documentation centre in Africa to service national centres housing libraries, archives and museums: an active form of co-operation and exchange between all these centres was envisaged. It was also pointed out that the activities of these centres in carrying out research in the cultural fields would allow for a fuller appreciation of social-cultural factors in the implementation of plans for economic and social development.

The study of the cultural heritage should form part of the training of all teachers, a basic element in the propaedeutic or first year of all university students, and an important element in university extramural studies.

This brief survey of recent African thinking on cultural matters is not without significance for colleagues in South-East Asia. There are also differences.[2] Africa is concerned to a considerable degree with the re-discovery

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1. *The Development of Higher Education in Africa*, Report of the Conference held at Tananarive, 3-12 September 1962, p. 51-4 (Paris, Unesco, 1963).
2. Attention is directed to a paper on 'The cultural forces in Asia and international

of her past: there are bends but no breaks in the continuum of Asian history. Furthermore, there is a major cultural element in the Asian societies which is not predominant in most African societies—the cultural impact of the great religions of Islam and Buddha, and, in the Philippines, the educational mission of Christianity, which, whilst of great contemporary importance in Africa, has not the long history which resulted, for example, in the establishment of the University of Santo Tomas in 1619. Again, the unit of African society is the tribe, whether this be reckoned a conservative anachronism as in Ghana (which in this matter is scarcely clinging to custom) or the source of great animosity and rivalry, as in Nigeria or Kenya. The more settled and smaller but closely knit communities of many Asian villages have contributed in their comparatively peaceful though slow agrarian development to a stability in which custom and tradition have been preserved in a way impossible to the wandering herdsmen or the tribal warriors of the African savannah and forest.

There is thus a much wider spread of cultural consciousness, whether this is revealed in social custom, craftsmanship, or art forms such as the dance, the puppet or shadow play, and music, whilst tradition has been treasured in temple and mosque as well as in the memory of the ubiquitous storytellers of the East.

It is possible that the problem in South-East Asia is not so much the discovery and rediffusion of a lost heritage as the need to work with and through the basic elements of tradition, adapting them without violence wherever possible to those demands of technological change which offer a rise in standards of living. It does not seem either wise or necessary that the desire for technological development should, under pressure of the present demand for rapid change, attempt to sweep aside a widely based and deeply rooted culture. The winds of change should not be given typhoon force. The computer is designed for a culture in which labour is scarce but capital is in plentiful supply: the handloom for a culture in which labour is plentiful but capital is scarce. It should be possible, and the universities might well point the way, to achieve at least an interim form of compromise between the ways of the artisan and the technocrat, between the values of rural and of urban society. If such a concept as an 'institute of Asian culture' is acceptable to countries in the region, its research might well extend beyond the glories, and they are many, of the past, to building a series of bridges between the past, the present and the future—between the village and the city, the weaver and the fitter, the weeder of rice in the paddies and the women teacher in

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understanding', by Takdir Alisjahbana, Professor of Malay Studies in the University of Malaya, included in *Papers on Cultural Affairs and International Understanding* (Kuala Lumpur, University of Malaya Press, 1965). This volume contains the addresses, the report and working papers of the Asian-American assembly held in Kuala Lumpur in April 1963.

school or training college, and then between these folk who have known change and the rising generation, born in independence, who will inherit the responsibilities and obligations which that independence entails.[1]

Thus with this final confrontation between tradition and technology the wheel comes full circle, and the process of education is seen as an essential element both of economic productivity and of social and political advance —the planner may well calculate his priorities, but he neglects either aspect at the peril of his plan.

However, comfort may perhaps be taken from the Fourth Annual Cambridge Conference on the Role of Industrialization in Development where it was suggested 'that in the developing countries the planners are becoming more cultural and the educators and thinkers more economic in their thinking. Perhaps at last the planning of economic growth is to receive a badly needed injection of humanism? And, perhaps also, the old cultures of Africa and Asia are about to receive a reinvigorating injection of economic viability?'[2]

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[1] See p. 282-9 for a detailed consideration of the university's cultural role.

[2] Article in *The Times Educational Supplement*, No. 2,574 of 18 September, 1964, p. 407.

7. Language policy and higher education

The Prime Minister of Malaysia, Tengku Abdul Rahman, speaking at the University of Singapore on 9 December 1964, is reported as saying 'It is only right that as a developing nation we should want to have a language of our own . . . if the national language is not introduced our country will be devoid of a unified character and personality—as I could put it, a nation without a soul and without a life.'

The adoption by all the countries of the region of such a policy, a process which has already gone far in Viet-Nam and Indonesia, has a double significance for higher education. On the one hand is the obligation to assist in the propagation and development of the national language; on the other are the consequences of receiving students whose preparation for advanced studies has been conditioned by the particular linguistic situation of their schools, of teaching in a language which is still in the process of building up a scientific vocabulary and is likely to remain outside the flow of international academic communication, and of organizing private reading and conducting research against the background of a library whose books and journals are in unfamiliar languages.

The actual situation in the region, and the problems involved, have been the subject of a special consultant's study:[1] this chapter of the report is abstracted from the general findings of that study in so far as they relate specifically to higher education, limited but somewhat elastic terms of reference since the nature of earlier teaching is an essential element in the language problems of the university.

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[1] Dr. Noss' monograph, which forms part of Volume III of this report, consists first of four general chapters and then of eight detailed studies of the language situation and problems of each individual country. The general chapters define the assumptions on which the arguments of the study are based, set out the problems common to the region, describe current solutions, and predict the situation likely to evolve within the next fifteen or so years. Each country study deals with language policy, its special effects on education, the nature of the native language, the interests of language policy, ethnic groups and the media of instruction, language courses and their objectives, language teaching resources, and the effects of language policy on non-language courses. Attention is also drawn to a monograph by R. B. Le Page, *The National Language Question* (London, Oxford University Press, 1964), a short

Before proceeding with this survey, however, it seems useful, as a form of condensed reference, to outline the present language situation in the countries of the region.

CURRENT LANGUAGE SITUATIONS

Burma

Burmese as a native language is spoken by possibly no more than two-thirds of the population. Other languages include Karen, Chin, Kachin, Shan, and the Mon and Wa group; Chinese languages, principally Hokkien and Cantonese; and a number of Indian languages of which Tamil and Telugu are the most widely used.

English was for long the medium of all middle and higher secondary education, and of higher education. After 1950, however, Burmese was adopted as the medium of instruction at both primary and secondary levels, though it is clear that in some minority areas the vernacular is the teaching medium for the first two or three years of school and that some private secondary schools, at least until recently, used in part one or another of the following languages for instruction: English, Chinese, Tamil or Telugu. English is introduced as a second language in the middle school, and is still necessary for university entrance and university work. As from 1966, however, matriculation examinations will be held entirely in Burmese, except for an English language paper.

In higher education, courses in English are still compulsory for the first year at the two universities of arts and science, and the first two years at the institutes of medicine, technology and economics; and more than half the courses, mainly those covering scientific and technical subjects, are still given with English as the main medium of instruction. Some technical courses are also conducted in Russian with Burmese interpretation.

The policies emerging from the 1964 Higher Education Law are not yet clear, but it seems evident that English is being taught at the level of higher education to avoid penalizing those who were poorly taught in school. The compulsory use of Burmese in the secondary schools, and the desire to move

study of the linguistic problems of newly independent States by a former professor of English in the University of Malaya.

There are also valuable references in T. H. Silcock, *Southeast Asian University*, Chapter V (Durham, North Carolina, Duke University Press, 1964), which makes the best possible case, in the circumstances, for the growing use of the national language as a teaching medium in the universities.

to Burmese teaching in more and more higher education courses places the minority groups in precisely the same position as those Burmese who were formerly compelled to proceed to secondary and higher education through a foreign medium—in that case English.

Cambodia

The national language is Khmer, spoken by most of the population. Vietnamese and Chinese languages, principally Tiechiu, are the principal minority languages. French and, to a very small extent, English are used as languages of wider communication. Cambodia inherited an entire educational system based on the French model, and it has not yet become possible to develop the national language as an instructional medium beyond the primary stage. In Franco-Khmer schools French is introduced at the primary level and thereafter becomes the medium of instruction. Higher education is given in French with some lectures in English. French is still the major language in government, official and social situations, but efforts are being made to replace it by Khmer (which is possibly related to Vietnamese, but unrelated to Chinese, Lao or Thai). Some 5 per cent of the population is bilingual in French and Khmer. English is the first foreign language in a few public lycées and the Buddhist University, and may also be taken up as a required subject in secondary schools.

Indonesia

The national language is Indonesian, a *lingua franca* spoken as the mother tongue by less than 8 per cent of the population, but familiar to most urban populations and accepted by the nation long before independence. It is basically the same as Malay and closely related to the other Western Malayo-Polynesian languages, the most important of which are Javanese (45 million) and Sundanese (15 million). Together, this language family accounts for the speech of nearly 90 per cent of the population, thus conferring an astonishing degree of homogeneity despite sub-groups and different languages and dialects within the family. Other language families include the Chinese (approximately 2.5 million), the Indo-European (English, Dutch, several northern Indian languages, German), Dravidian, and those of certain aboriginal groups. Secondary and higher education were conducted in Dutch before 1940, and subsequently many higher education courses continued to be given in Dutch. However, Indonesian was made the official medium of instruction in 1945, and today all levels of education are conducted in it, though the first three years of primary school instruction may be given in any of the six most important vernaculars. English has become the main language of wider communication, and is a compulsory subject throughout all six years of the secondary system: the rapid if not altogether effective substitution of English for Dutch has indeed been a remarkable feat. English is basically used at the universities for reading purposes and as a research tool, but teaching is also carried out in English by expatriate staff, and has been used for courses in science and technology, agriculture, medicine, economics and education. Furthermore, remedial teaching of English has become a feature of a number of such faculties to develop a better comprehension of lectures as well as textual materials. Indonesian is now used almost exclusively in official and social situations as well as in government. Dutch is still spoken by members of the older generation who hold or held high positions; but it is not countenanced officially, though recently the number of Indonesians going to the Netherlands for further studies has again begun to increase.

Laos

Lao, mainly in one or another of two dialects, is spoken by perhaps 60 per cent of the population. Khmer, Meo, Thai dialects, Chinese (chiefly Tiechiu), Vietnamese and Yao are important minority languages. Lao is closely related to Thai, and is the vernacular of the majority of the population of nearly the entire north-east of Thailand, though it is not taught in Thai schools. Primary schools teach in Lao for the first three years: after that all instruction is given in French, for the same main reasons as in Cambodia. Students go abroad for higher education—80 per cent of them to France—and are usually required to have either French or English. However, a 1962 Royal Ordinance emphasizes that the national language should be studied more systematically at the secondary level, in an attempt to give a more Asian orientation to cultural and educational development.

Malaysia and Singapore

There are six language families used by the people of Malaysia and Singapore. About two-fifths of them, some 4 million, are native speakers of one of the Western Malayo-Polynesian languages—the majority of Malay/Indonesian—and around an equal proportion are native speakers of one of ten Chinese languages, of which Hokkien, Cantonese, Tiechiu and Hakka are the most current. Something less than a million people speak one of the Dravidian languages, Tamil (85 per cent), Malayalam or Telugu, and about 150,000 speak one of the Indo-Iranian languages—Punjabi, Sinhalese, Hindi/Urdu, Bengali or Gujerati. Lastly, less than 100,000 speakers have one of the European languages as their first tongue, and there is a small group of Thai speakers. It is, however, also to be noted that a large proportion of the non-Malay linguistic groups is able to speak Malay fairly fluently if not elegantly. English comes next as an inter-ethnic medium of communication

—rather low on the average scale but high in major urban areas and the upper reaches of society and government.

The national language is Malay (basically the same as Indonesian), but English also remains officially in use until 1967, when Malay is to become the sole official language except in Sabah and Sarawak, where an extension of a further ten years is contemplated. Chinese and Indian languages are used for unofficial purposes, and the present educational structure allows subsidized primary schools to teach in English, Malay, Chinese or Tamil. However, in Malaya government examinations at post-primary level are held only in English and Malay; and secondary education in Indian and Chinese languages has begun to decline, except in Singapore, Sabah and Sarawak where examinations in Chinese are still held. A Chinese university has been established in Singapore which is in the process of becoming a State university. University education in Malaya is still in English, but by 1967 it is expected to be available bilingually. Nevertheless it appears likely that teaching in English at the universities will continue for a considerable time.[1]

The Philippines

The national language is Tagalog (since 1959 called Pilipino), spoken by about 6 million people. Visayan (which by some is considered a sub-group of languages) is spoken by over 10 million, and other important vernaculars by a further 14 million. Eight vernaculars (accounting for 95 per cent of the population) are recognized by the educational system; all are members of the Western Malayo-Polynesian group. Vernaculars are used in primary schools in the first two grades—then English takes over.[2] Secondary schools teach in English with Pilipino as a required second language. University education is given in English, with Spanish as a required second language. English is employed for official and governmental purposes, but Pilipino and the vernaculars are used in appropriate social situations.

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[1] Speaking on the policy of establishing Malay as the sole national language, the Prime Minister of Malaya, at the first Convocation of the University of Malaya held in the national language (1964), said 'This [the policy] should not interfere with the education of the university or the language used to provide such education.' A recent statement (September 1965) by the Tengku on the desirability of continuing some teaching in English and Chinese and the necessity of avoiding 'bloodshed' over language questions has met with vociferous if limited opposition.

[2] In this connexion, it is interesting to note that according to recent studies, literacy rates in various relevant languages even in the sixth grade are surprisingly low: not more than a high of 88 per cent for various relevant vernaculars, and in three of these dropping below 59 per cent; 65 per cent for English, with Pilipino, where it is not also the vernacular, about the same, though at grade 4 level 37 per cent, as against 29 per cent for English (*1963/64 Annual Report of the Research, Evaluation and Guidance Division*, Department of Education, Manila).

Thailand

The national language is Thai, which is, and always has been, the medium of instruction at all levels as well as being the official and social language. Other vernaculars are few (Malay in the extreme south, several varieties of Chinese by about 13 per cent of the population, and many tribal languages in the north). Dialects closely related to Thai are spoken by people in the north, north-east and the mid-south, and the children have little difficulty with the standard language in school. English is the principal language of wider communication and is now introduced as a second language in the fifth year of the seven-year primary course. University teaching is in Thai, but most of the students' reading has to be done in English. The effect of this unilingual policy on higher education has not, inevitably, been attended by the success which has met Japan's policy in the same field: the resources available have not been comparable. The use of English as a 'research' language will only be effective if considerable improvements can be made in the pre-university teaching of English. As it is, university education in Thailand remains a *pis aller* for the great majority of students, those who are neither sufficiently well endowed with talent nor money to seek a university education abroad.

Viet-Nam

The national language is Vietnamese, spoken by the great majority of the population (over 90 per cent, with about 83 per cent native speakers). Other important languages are Cantonese and other Chinese languages (1 million) and Mon-Khmer (600,000). French is still the major language of wider communication, but English is spoken to some extent and has been gaining in importance.

Primary education is in the Vietnamese medium, except for public vernacular schools and private Chinese or semi-public French-medium schools. Secondary education is conducted in three language media: Vietnamese in public and private schools, French and Chinese in certain special categories of semi-public and private schools, with Vietnamese far in the majority for all types of schools. Both French and English are required languages in the second cycle. Higher technical education and teacher training occurs in Vietnamese, French, and English, in that order of frequency. In the three universities, French is used as a partial medium of instruction in most courses, but as the sole medium only in the case of the medical faculties. English, apart from certain special lectures and doctoral work, is used mainly in private study involving English texts and journals. No Chinese university exists in South Viet-Nam, but Chinese studies form part of the classical literary curriculum, and there is an Institute of Sinology attached to the University of Hué.

TABLE 45. National languages in the region

Country	National language	Affiliation of spoken language	Affiliation of written language	Literature[1]
Burma	Burmese	Tibeto-Burman (Sino-Tibetan)	Indic	RCT
Cambodia	Khmer (Cambodian)	Mon-Khmer	Indic	RC
Indonesia	Indonesian	Malayo-Polynesian	Roman	MT
Laos	Lao (Laotian)	Tai (Sino-Thai)	Indic	R
Malaysia	Malay	Malayo-Polynesian	Roman	RC
Philippines	Tagalog (Pilipino)	Malayo-Polynesian	Roman	C (Tagalog)
Thailand	Thai (Siamese)	Tai (Sino-Thai)	Indic	RCMT
Viet-Nam	Vietnamese	Mon-Khmer, Austroasiatic, or unknown	Roman	RCM

1. Heavy concentrations of literature in certain fields are shown by the following symbols: R = religion, philosophy and history; C = classical literature; M = modern literature (including newspapers and magazines); T = technical and scientific.

The confusion of language streams in the universities (in terms both of about half of the entrants knowing more French and nearly half more English, and of varying emphasis on Vietnamese and French, together with an increasing number of English textual materials) and constant policy shifts in language policy at the lower levels have created many problems for the university student, who may not find a course of study in the language he chose to concentrate on whilst in secondary school.

The main characteristics of the national languages of the countries of the region—that is, the standardized indigenous dialect for which the written language has the primary official sanction of the government[1]—are shown in Table 45.

The multiplicity of vernaculars—i.e., indigenous languages other than the national language—obviously a complicating factor both from the point of view of education and of national unity, are shown in Table 46.

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[1] This somewhat cumbrous definition is useful to distinguish between Malay and Khmer on the one hand, and English and French on the other, when the use of both is officially sanctioned. It may also serve as a reminder that Hokkien and Mandarin are languages, but 'Chinese', a useful term for a group of languages, is not.

TABLE 46. Vernacular languages in the region

Language	Vernacular education in	Also spoken in	Regional speakers (millions)
Javanese	Indonesia	Malaysia	50
Sundanese	Indonesia		13
Visayan	Philippines	Malaysia	11
Madurese	Indonesia		8
Cebuano	Philippines		7
Ilocano	Philippines		5
Cantonese	Chinese schools (temporary medium)	All countries	4
Hiligaynon	Philippines		4
Tiechiu	Chinese schools (temporary medium)	All countries	4
Karen	Burma	Laos, Thailand	3
Minangkabau	Indonesia	Malaysia	3
Hokkien	Chinese schools (temporary medium)	All countries	3
Batak	Indonesia	Malaysia	3
Bicol	Philippines		2
Meo	Thailand, Laos	Burma	2
Hailam	Few Chinese schools	Most countries	2
Shan	Burma	Thailand, Laos	2
Balinese	Indonesia		2
Pampango	Philippines		1
Hokchiu	Few Chinese schools	Most countries	1
Achinese	Indonesia	Malaysia	1
Bugis	Indonesia	Malaysia	1
Pangasinan	Philippines		1
Chin	Burma		1
Yao	Thailand	Laos, Burma	1
Cham	Viet-Nam	Cambodia	1
Kachin	Burma		1
Khmu	Laos	Thailand	1
Waray	Philippines		1
Mon	Burma	Thailand	—
Muong	Viet-Nam	Cambodia	—
Iban	Indonesia	Malaysia	—
Kadazan	Indonesia	Malaysia	—
Stierg	Viet-Nam	Cambodia	—
Rhode	Viet-Nam	Cambodia	—
Jarai	Viet-Nam	Cambodia	—
Kahaw	Viet-Nam	Cambodia	—

LANGUAGE AND EDUCATION

The main problems confronting nearly all countries are the propagation of the national language (not a problem in Thailand) and the role of languages of wider currency. Both these problems have considerable bearing both upon the pre-university preparation of undergraduates and also upon methods of teaching and study at the university.

All eight countries have found it necessary to include a language of wider currency in their language policies, mainly for purposes of higher education and communication with the world at large—in some cases this language also serves as a lingua franca between various ethnic groups in one country. English is the world language serving Burma (LF),[1] Indonesia, Malaysia (LF), Philippines (LF) and Thailand; French is employed in Cambodia, Laos (LF) and Viet-Nam. In all eight countries a third world language, Mandarin, is a powerful link binding the various segments of the Chinese community together—in no country, however, is it recognized as an official language, though it is taught at one level or another in Chinese schools.[2] Dutch has a vestigial importance in Indonesia, though it has no official recognition—Spanish is in a similar position in the Philippines, but is nevertheless a compulsory element in higher education (where the rule that no student can take his first degree without completing 24 units of Spanish is the subject of much dispute among educationists).

Thus there may be, and often are, three elements in the educative process: the vernacular, the national language and the world language. All countries practise some form of public vernacular education:[3] from this stage the problem is generally whether to use the world language as the medium of instruction from (approximately) the seventh grade onwards, or whether to use the national language as the medium of instruction throughout the first two levels of schooling, introducing the world language, in language courses, mainly at the higher secondary level.

Whichever policy is adopted, no entirely satisfactory solution for higher education seems to emerge, a situation which is not improved by the fact that in most countries primary and secondary education are directed by one authority, and university education by another.

If the national language is emphasized in higher education, graduates of the system will be cut off from access to world literature (particularly in the field of technical and professional periodicals) and from personal contacts with other scholars.[1] If, on the other hand, the world language is the main medium of instruction many otherwise most able students who have no working knowledge of the world language may be disqualified forever from obtaining a higher education, and their services will be lost to the nation.

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[1] LF = serves also as a lingua franca.

[2] Every country in the region has Chinese-medium primary schools and at least one secondary school—even Laos. The only Chinese university is in Singapore, which also has a Chinese Liberal Arts College, Ngee Ann.

[3] 'It is axiomatic that the best medium for teaching a child is his mother tongue,' Unesco, *The Use of Vernacular Languages in Education* (Paris, 1953), but see Le Page, op. cit., p. 21, for some pointed comments on this axiom when applied to multilingual situations.

Where a compromise is offered—for example Burma has anticipated the problem by locating it in the secondary schools, with parallel streams being taught in Burmese and in English—pupils taught in the national language appear to have better school results, but under present circumstances it may well be that those from the world language stream will have a more successful university career and end up with the jobs which were the goal of both streams.

Where the national language is the university teaching medium, as in Thailand, there is an overwhelming desire among students to acquire degrees from abroad—clearly a more prestigious form of education (duly recognized as such by civil service salary scales); where the world language is the medium, as in Cambodia, the student who fails to enter the university has forever forgone his hope of a fully successful career.

The full force of the difficulty is not met until the university stage. Except in the Philippines, Laos and Cambodia, where the world language is used as the medium of instruction from the primary school, it is taught merely as a second or third language with emphasis on simple reading and writing proficiency rather than on expression in or even a comprehension of the spoken language, and the provision of texts presents no particular difficulty. It is only at the third level that the possibility of translation breaks down. The frequently canvassed solution of the translation and adaptation of texts from various languages[2] is more easily promulgated than effected. Such a solution can at best only apply to education at the secondary level or to some forms of technical education with a prescribed content, where a few basic texts will serve and research is not required. Even were an expensive crash programme for the preparation of basic university texts to be put into operation, it would scarcely cater at all for the real needs of higher education which involve an ever-growing spate of journals and a vast collection of books which may never be reprinted in their own language, to say nothing of achieving translation into another.

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[1] This thesis may, however, be questioned on the ground that emphasis on national language need not mean neglect of adequate communicative command of a world language. Hungarians or Finns, for instance, emphasize their languages, which few other people seem to be able to master, but they have not been cut off—at least on this count—from access and personal contact.

[2] The consultant's chapter on Burma traces the evolution of a translation machinery from the Burma Book Society (1933), through the Translation Bureau, the Literary and Library Bureau of the Education Department, the Burma Translation Society, the Directorate of Textbook Production, the Union of Burma Literary and Translation Commission, and the Translation and Publications Department of Rangoon University, until its most recent emergence (1964) as a Textbook Committee.

The use of translation can apply to higher education (save perhaps in a few limited technical areas) only if the university is conceived as offering an extension of the education given in the secondary school—and that does not correspond with the aspirations of the region.

There are other problems. Expenditure on language teaching—involving staff, textbooks, reference books and equipment—when spread over the whole of an educational system, can be fairly well assimilated in an over-all budget. Such a process is not possible within the narrow budget of a single institution, which is largely distributed between individual faculties. Similarly the loss of key personnel within a large system can be compensated by transfers: in a university the loss of one professor through language difficulties may cause almost irreplaceable damage.

The effect on recruitment is also, in many cases, very marked. The new student whose education has taken place in schools where the national language is the medium of instruction is likely to be well grounded in general subjects, but not capable of working adequately in a foreign language, essential to the university work. The student who, on the other hand, has been taught in a world language is likely to arrive with a fair command of the world language but very little else. In either case selection for admission may be prejudiced: either because the student, whatever his general education, has been educated in the 'right'—i.e., the national medium—or, on the contrary, because he appears to be educable in the new teaching medium. Similarly a student who is admitted may be insufficiently prepared, either (a) because he has been given undue preference because of his command over the medium of instruction, whether this is the national language or a language of wider communication, or (b) because while he has an adequate general grounding, concentration on the vernacular or national language has left him insufficiently in command of the medium of instruction to follow lectures and textual materials.

Other difficulties include questions of staff, of library provision and of research. No country in the region, however intense its nationalism, would deny the significance of the contribution still being made to higher education by expatriate staff. As university courses in the national language begin to replace those in the world language, so will the expatriate professor have to be replaced, except for special purposes and in so far as basic competence in a world language is maintained in a form sufficient to enable students to understand lectures as well as follow texts. To this problem there is no easy answer. There are few foreign specialists willing to devote time to language studies which may be quite irrelevant to their next assignment.

The solution must obviously be found in the training of local staff, but this is a long-term policy, and nationality—or linguistic suitability—should not be the major criterion for the appointment of university staff. The question is dealt with at some length in Chapter 11, in relation to staffing problems.

University textbooks can be partially supplied by feverish translation and a conveyor-belt system of compiling new texts in the national language—in this area Indonesia and Viet-Nam have accomplished a great deal, but throughout the region the libraries are filled with world language books and journals: 'Recognition of this fact is precisely one of the reasons for the requirement of world language study in pre-university schooling, even in those countries which have adopted the national language medium throughout. It is fully realized that research and international communication depend on the ability of the student at least to read world languages. That he cannot do so, in most of the countries where a world language is introduced late in the educational process, should not be interpreted as a failure of language policy; it is a failure, rather, of language teaching.'[1]

INSTRUMENTS OF LANGUAGE POLICY

It is also necessary to consider the instruments selected by governments for executing their language policies. These range from ministries of education to the media of mass communication, research organizations, teacher-training colleges, translation services, national language development agencies and services for the development of educational materials.

Each of the eight countries has a non-university agency with primary responsibility for the development and standardization of the national language. Representative institutions are the Cambodian National Culture Commission, which includes membership from institutions of higher education and the Buddhist priesthood as well as from the Ministry of Education and other government departments; the Institute of National Language in the Philippines, which is now part of the Department of Education, but maintains contact with the University of the Philippines and its linguistic studies; the Language and Literary Agency in Malaysia, with terminology, education, and research sections. The universities, oddly enough, are seldom allotted any specified official role in the propagation and development of the national language, and their participation is voluntary and independent. It may be questioned whether or not it is wise to neglect the influence of the university campus, particularly when its professors may hold positions of prestige in the community and its graduates are those most likely to succeed to posts of influence in the community. Even where a constructive relationship exists between the institution charged with implementing national language policy and the universities, problems are still likely to arise over parallel projects of staffing, and the delay in the publication of research material which may arise if approval of the new vocabulary often thus necessitated is slow in coming from the appropriate authority. Furthermore, responsibilities of the national language institutes include the development of vocabulary and often the regularization of the grammar and orthography of the language, and their output ranges from terminological lists to full-scale dictionaries, grammars, encyclopaedias and atlases. The provision of authorized translations and the enlargement of vocabulary are undertakings involving a study of concepts, and in this esoteric field it is difficult to see the advantage of isolating the work, and often the staff, from the resources and prestige of the university.

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[1] Noss, op. cit.

It is encouraging to note that various experiments to deal with the problem of proficiency in a world language at the university level are under way in Indonesia and Thailand, and that in the Philippines language problems at all levels are being investigated through the graduate linguistic studies and Institute of Language Teaching associated with the College of Education at the University of the Philippines, and through the Philippine Centre for Language Study established co-operatively by the University of the Philippines and the University of California, with private foundation support. But much more needs to be done. It is no exaggeration to suggest that difficulty with the media of instruction and learning is the largest single factor retarding the advancement of standards and resulting in a continuation of high failure rates. It can hardly be a satisfactory situation if universities do not take an increasingly greater part in research relating to language policy, helping to introduce methods of teaching and learning at the primary and secondary, as well as the higher level, to meet these difficulties.

Finally, it seems desirable to stress the importance of the role to be played by teacher-training institutions preparing staff for secondary-school work, since they will have to prepare teachers both in content and in methodology: in content, for the world language; in methodology, for the national language,[1] and in both for those who will specialize in language teaching.

A solution of these difficulties is not easy to find. The obvious answer—complete education in the national language medium, together with skilled teaching in the use of a world language for purposes of comprehension, has in Asia been attempted by Japan, where comprehension of the written word has been achieved with considerable success: the gap remaining, the difficulty still experienced even by many scholars in communicating orally, is possibly only a temporary phase. Such a solution, however, calls for a tremendous expenditure of money and ability over a wide period of time, and has to be linked to a deliberately assumed global outlook in international affairs.

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[1] The assumption that the student needs no instruction in the employment of his national language is scarcely borne out by the experience of the developed countries, where failure to communicate rather than lack of knowledge is the source of many examination failures and the cause of much discontent among employers. The situation is clearly more difficult with students whose vernacular may well not have been the national language which itself may be far from rich in the reading material which assists to promote communication, and far from stable in its vocabulary and usage.

LANGUAGE TEACHING

In the meantime it is necessary to pay constant attention to the study of language teaching methods, and to the training not only of specialist language teachers, but also of all teachers, since the most effective teaching comes not from set language lessons, but from daily employment in the traffic of the classroom. It is necessary, at the earliest possible moment, to free the universities either from the burden of teaching students and directing their reading in a language in which they are not proficient, or from the necessity, thus imposed, of adding language teaching as an additional load upon staff and students.[1] Here is yet another good reason for the closest possible liaison between the universities and teacher training.

These questions prompt consideration of yet another problem, the cost of language teaching in schools in relation to its efficiency and the output of the schools. Experiments now being conducted in the Philippines, particularly that known as the Rizal Experiment, would seem to indicate that the neurologists' views about the advantages of early language learning are sound, since the first results suggest that the earliest possible introduction of a second language, even in the first year of primary schooling, can be most successful.[2]

As against this belief—which is supported, for example, by the results of recent experiments in teaching French to English primary-school pupils—is the question of the cost of teaching a world language to primary school pupils, many of whom will leave during the first year of school, and comparatively few of whom will proceed, at least for some time to come, to secondary education. The dissipation of teaching time and staff on the instruction of early leavers may well hamper the development of other skills of more value to the community. In addition, there is the problem of providing a very large number of capable language teachers and great quantities of instructional materials.

This argument for a later start is often reinforced by the assumption of the greater effectiveness of intensive teaching over a short period as against a course spread over a wide period. This possibly overlooks both the factor of retention, and also the doubtful wisdom of introducing a concentrated language course at a time when students are already fully extended by their studies for university entrance.

Noss, with a particular concern that universities should not waste their own energies and divert those of their pupils from their chosen course by being obliged to give language instruction, suggests that in the future 'when language instruction can be delayed until late in the educational system (as in the case of preparation of students in a world language for higher education purposes), it will probably be removed from the general curriculum entirely, and taught intensively by specialists in programmes specifically designed for the purpose. Such a programme might consist of six months to a year of full-time pre-university language training, or be spread out over several years of extra-curricular sessions, for example after hours or on weekends'.[1]

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[1] Though this must undoubtedly be done so long as the schools fail to fulfil their functions in this respect.

[2] That is, the capacity to learn a language is at its highest at this stage. But the child is still not capable of profiting significantly from unskilled teaching or inadequate learning opportunities.

It is possible, despite the less intensive teaching, that the latter alternative would be preferred, despite the staffing difficulties obviously involved, since voluntary attendance at such courses would not be confined to students specifically entering universities. The spread of the world language would be wider, and the psychological difficulty of distracting a student eager to commence advanced studies by requiring him to concentrate on another field (essential to his further work, but possibly remote in intrinsic interest and often of considerable difficulty) would be avoided.

In this context of problems the contribution that can be made by the universities, and in particular by their departments of education and social sciences, lies, beyond the obvious field of training, in research—both operational and theoretical, in the organization of controlled experiments in schools and classes, in devising evaluation techniques for language teaching experimentation, and, of course, by research in the many fields of linguistics.

LONG-RANGE PROJECTIONS OF LANGUAGE DEVELOPMENTS

Noss concludes his study with some long-range predictions as to the language situation in the region by 1980, based upon the stability of language policies at present in force. On United Nations population projections, it is assumed that by 1980 the whole population will be competent in the national language, that the policy of secondary education in a world language will have produced speakers of that language amounting to one-third of the population,[2] that the policy of required courses in world languages will have produced users equivalent to 10 per cent of the total population,[3] and that the permitted practice of using Mandarin as the medium of instruction in private Chinese schools will have produced users equivalent to one-third of the present percentage of the ethnic Chinese populations applied to 1980 projections.

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[1] Noss, op. cit.

[2] One-sixth in the case of Malaya, where only 40 per cent of students are currently enrolled in the English stream, though an increase to 50 per cent is likely. The proportion is based on the 1964 estimate of English speakers in the Philippines, which has pursued this policy for the longest time.

[3] Six per cent French and 4 per cent English in Viet-Nam. The percentage is based on the highest estimate for English users in Thailand, which has pursued this policy unencumbered by other factors, for the longest time.

TABLE 47. 1980 projection of national and world language users by country

Country	1980 population (and N.L. users)	English/ French users	Total E/F users	Ethnic Chinese	Total Chinese	Mandarin users
	millions	%	millions	%	millions	millions
Burma	32	10 E	3.2	1.8	0.6	0.2
Cambodia	9	33 F	3.0	7.5	0.7	0.2
Indonesia	150	10 E	15.0	2.5	3.7	1.2
Laos	4	33 F	1.3	2	0.08	—
Malaysia	20	16 E	3.2	38	7.6	2.5
Philippines	50	33 E	16.6	1.3	0.6	0.2
Thailand	50	10 E	5.0	9	4.5	1.5
Viet-Nam	21.5	06 F 04 E	1.3 0.9	6	1.3	0.4
						6.2

Tables 47 and 48[1] show national and world language users by country, and by language, in 1980.

'The implications of the second table [Table 48] even granting its validity, are not entirely clear. Although Indonesian/Malay promises to have by far the largest number of users in the region, it is represented in only two countries; the existence of a related (but mutually unintelligible) national language, Pilipino, does not really tend to support its position. The same kind of observation applies to the next two largest national languages, Thai/Lao and Vietnamese; the former's position is further weakened by the existence of two separate writing systems. Mandarin will have complete representation in every country (including Laos and North Viet-Nam, although figures are too insignificant to appear in the table), but the total number of users will be comparatively small, and political factors are obviously against its development even as a regional lingua franca. This leaves English as a strong candidate for regional intercommunication, even in 1980; its position is further strengthened by world-wide considerations and the existence of abundant literature. The only other language represented in as many as three countries (four, including North Viet-Nam) is French. Spanish and Dutch are not included in the table, because they are neither national nor regional languages at present.'[2]

Thus if developments take place along the lines suggested by present trends, national languages, propagated largely by mass media and the education systems, will eventually achieve total acceptance, becoming the principal media of instruction in every country, though supplemented in the very early

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[1] Noss, op. cit.
[2] ibid.

TABLE 48. 1980 projection of national and world language users by language (in millions)

Language	Country									Total
	Burma	Cambodia	Indonesia	Laos	Malaysia	North Viet-Nam	Philippines	Viet-Nam	Thailand	
Burmese	32.0									32.0
English	3.2		15.0		3.2		16.6	0.9	5.0	43.9
French		3.0		1.3				1.3		5.6
Indon/Malay			150.0		20.0					170.0
Khmer		9.0								9.0
Mandarin	0.2	0.2	1.2	—	2.5	—	0.2	0.4	1.5	6.2
Pilipino							50.0			50.0
Thai/Lao				4.0					50.0	54.0
Vietnamese						22.5		21.5		44.0

grades by vernaculars. In higher education, in most countries, national languages will be supplemented by world languages, which, for a considerable time to come, will continue to be used as research tools and for international communication.

8. National development—some qualitative implications for higher education

The earlier chapters of this report dealing with economic development indicated that the major requirement from higher education was a balanced output of high- and middle-level manpower: quantitative projections of output in key sectors were accordingly put forward. The general conclusion arrived at, however, was that whilst some additional provision was required, generally in specific fields, to supplement normal growth, the crux of the problem lay not so much in increasing the number of graduates as in raising their quality.

In the fields of social and political development the initial stress was certainly laid upon numbers—universal free compulsory primary education; more education facilities for girls and women; the development of education in rural areas. But here too, qualitative factors enter, and the results of quantitative expansion may prove costly and indeed disastrous, if the question of quality is not also considered.

The quantitative aspects of education can, to a certain extent, be regulated by the minimum manpower demands of a growing economy, both in the public and private sectors. Not to meet them would be suicidal. The claims of social development, stretching far beyond the economic minimum, will be a matter for political decision, in which finance will play a major role. They are likely to be met to the extent to which it is considered politically expedient to satisfy public demand, rather than upon any assessment of desirable social progress, and they will be in strong competition with the claims of other aspects of development—health, agriculture, communications—and also with the claims of defence. Ultimate decisions are likely to be guided by target indicators, themselves based upon past trends and future projections, such as percentages of GNP or the allocation to the various educational levels of specified population ratios and *per capita* expenditures.

It is necessary, however, in preparing the educational planning brief, to supplement the case for quantitative development by certain qualitative implications which have a significance both in their effect upon output, and in their influence upon concepts of university organization and expansion.

This chapter deals with certain of these qualitative implications, which are no less significant for higher education considered as an element of productivity, than for its contribution to social and cultural progress.

Five main qualitative aspects are considered: the question of teacher training, upon whose soundness the whole of the educational structure will rest; the significance of interdisciplinary research in strengthening the overall contribution of higher education to the planning as well as the operational aspects of development; the desirability, through extra-mural and similar activities, of broadening the university's field of influence; the process of community development (the chosen aspect is rural development but the basic arguments, though not necessarily the methodology, apply to community development in the new and growing conurbations); and finally the contribution of the universities to the development of the cultural aspects of the newly emergent countries' national identity.

For an optimum rate of development, social progress and economic growth both require a literate and well-informed population with an increasing supply of qualified manpower at the middle and upper levels. Unless low standards are raised and proper opportunities made available for the development of the exceptionally gifted, a mere increase in enrolments, however large, will make little lasting contribution to national progress. It appears to be generally assumed that quality is something that with care can be infused into quantitative expansion at all levels; that one can within the next fifteen to twenty years (i.e., by 1980-85) introduce universal compulsory education up to the seventh grade, expand secondary education, develop technical and vocational education, expand higher education, promote research, and, at the same time, improve facilities, standards, and teaching staff, reform organization and curricula, and also develop a fuller or more adequate use of the national language. With unlimited resources such a prescription might perhaps be met; but in hard fact no country in the region is able or willing to devote much more than 3 to 4 per cent of its national income (GNP) to education and as has been noted in the analysis of development plans,[1] the current provision for investment in education, with the exception of Malaya and Singapore, amounts to less than $0.85 *per capita* per annum. With such a rate of expenditure and investment it is inevitable that there should be a conflict between quantity and quality. With limited resources, quantitative increase means spending as little as possible per student; qualitative advance requires a considerable increase in *per capita* expenditure to ensure the provision of more and better qualified teachers, of enhanced facilities and better equipment, and extensive research programmes in universities and other appropriate institutions. There is no short cut to quality even though rare dedication and enthusiasm can, here and there, work occasional miracles. Priorities must be decided, or circumstances will fashion their own chaotic results. Since it is equally true that demands for expansion and democratization cannot be ignored, such choices must perforce consist of judicious compromises likely to achieve strategic concentrations of capital and human investment in areas of educational development where, at comparatively low cost, they can in time exert a maximal and widening influence. Upper secondary and higher education are suitable fields because enrolments at these levels are relatively small, so that even with higher per student costs, major improvements can be made at a lower total cost than in the case of other levels of education—particularly as, if the whole of these two areas cannot be covered, it is possible to concentrate on significant sections or numbers of institutions within them. It is from the graduates of these levels of education that leadership must emerge, and those graduates who enter the teaching profession can, if of high quality, begin to break the vicious circle in which poor standards at each level react adversely upon the other levels.

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[1] See above, p. 107.

TEACHER EDUCATION AND TRAINING

The following statement from Indonesia,[1] which has had and continues to have great difficulties in meeting teacher requirements, exemplifies what is universally recognized: 'Among the numerous basic factors involved in education, it is the teachers who play the central and decisive role. A student who has talent and possesses physical and mental health will never become a progressive and civilized adult without the help of good teachers. Good school buildings, sufficient educational equipment and a perfect curriculum will be dead things if there are no educated teachers to give them life.'

But with an exception in the case of the Philippines, the region presents a picture of a serious current shortage of qualified teachers, grave problems of quality and balance in teacher training, and inadequate social and material incentives to attract recruits to the teaching profession. The need for in-service training and an increased output of teachers are great even if only to maintain minimum standards with consistently growing enrolments at all levels. In order to raise the quality of education and enable it to satisfy social and cultural aspirations not only must many teachers be trained, but the quality of teacher education and training must be greatly improved and a fair proportion of teachers at the various levels will need to acquire more than the stipulated minimum qualifications, which sometimes rise little above the level for which the teacher is to be employed. While the university should provide training facilities for higher secondary-school teachers and carry out research in education, the form in which it is to influence and contribute to quality over the whole range of teacher training is a matter which needs to be worked out individually in each national situation. But whether directly through its faculty, institute, or school of education, through training programmes for the staffs of teacher-training institutions, or less specifically through its membership of a wider education council or board, university involvement and responsibility at both national and provincial or regional levels is essential.

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[1] *Report about General Education in Indonesia, July 1958—July 1960*, p. 14 (Djakarta, Department of General Education, Research Section, July 1961).

Pointing out the significance of teacher-training programmes for a developing educational system, Lionel Elvin[1] stresses that: 'It is here, and it can be only here, that appropriate training can be given for the new subjects that come into the secondary-school curriculum. It is here that more modern methods of teaching must be introduced. It is here that the science laboratories must be well equipped—so as to set a standard that teachers will not forget when they get into the schools. It is here that experimental work must be done with new syllabuses, new text-books and new methods of teaching. It is here that the lesson must be driven home that merely descriptive instead of experimental science teaching is not science teaching at all. It is here that we must get away from old and ineffective methods of language teaching. It is here that we must work out how to bring history teaching into accordance with the needs of young people in the contemporary world, and especially how to introduce them to living in our modern society.'

The following examples give some idea of current inadequacies at the post-secondary level of teacher training and the kind of measures that are being taken to meet them. While the teacher/pupil ratio at the secondary level varies between 1 : 26 for the Philippines to 1 : 35 in Viet-Nam[2] the proportion of insufficiently qualified teachers, with the exception of the Philippines, is high for all countries. In Burma, government statistics for 1960 indicate that more than 85 per cent[3] were not adequately qualified. In Indonesia it was estimated that in 1960 some 76 per cent of the senior secondary-school teachers were not fully qualified. In Thailand during the early 1960's, no more than half of the secondary-school teachers held academic qualifications specifically related to secondary-level teaching. In Cambodia, training until recently was available only for teaching up to the lower secondary level, and some 30 per cent of all secondary teachers are expatriates from France. In Malaysia there is an almost complete dichotomy between the training of teachers for lower and upper secondary classes on the one hand, and for the two pre-university years on the other: the first are staffed by certificated teachers from a number of training colleges, the latter by graduates from the universities who may or may not have post-graduate teaching qualifications. Furthermore, in 1962 there was an immediate shortage of 1,000 graduate teachers, whilst in 1964 an additional estimated 3,000 to 4,700 lower secondary-school teachers were required for the new scheme of comprehensive education launched in January 1965.

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[1] L. Elvin, 'The recruitment and preparation of teachers', *Planning Education for Economic and Social Development*, p. 192-3; OECD, the Mediterranean Regional Project (Paris, 1962).

[2] It must also be noted that in several countries—particularly Indonesia and the Philippines—a large number of part-time teachers is included in reaching these approximate ratios.

[3] Including a little over 11 per cent who had a university degree but no teaching qualifications.

While only rough indicators of teacher qualifications at teacher-training institutions and technical colleges are available, it appears that there is considerable need to raise standards for the first, and that in the case of the second it is extremely difficult to recruit staff who have sufficient practical experience as well as appropriate academic qualifications. Much of the criticism that is levelled against secondary and post-secondary technical education is probably, in part at least, due to this deficiency.

In universities and other institutions of higher education the staffing situation also presents serious problems which are likely to be aggravated with the continuing rapid expansion of enrolments.[1] First, in terms of staff/student ratios, there is, with some exceptions for professional courses like medicine, engineering and teacher training, a shortage of full-time staff, with ratios for arts, social science, and law faculties ranging between 1 : 20 and 1 : 49 (including part-time staff) in the case of Viet-Nam. Second, with the exception of the universities of Malaya and Singapore, the proportions of part-time staff are very high—for instance, 64 and 71 per cent respectively in faculties of arts and social science in Thailand and Viet-Nam, whilst in Indonesia almost all university teachers are part-time in the sense that they undertake major teaching and other assignments outside their own institutions. Third, the proportion of university staff with doctoral degrees and research experience is generally low—in most institutions such high qualifications are usually held only by professors and heads of departments. Fourth, as in most other countries, the question as to whether it is desirable or feasible to provide some form of training in teaching methods and techniques for university teachers is only now receiving some attention. The immediate implications of this situation are clear: there can be very little student-teacher contact outside the lecture hall; teachers have little time for research and even less time to encourage as well as help students to undertake research, not only at post-graduate but also at undergraduate level. Teaching is for the most part formalized, and, without a sufficient research connexion, tends to be largely a matter of imparting information rather than nurturing an inquiring spirit linked to both a basic understanding of a special field and what Oppenheimer has called a 'sense of the span of things human, the span of things that the intelligent man can cope with'.[2] Since he has little leisure and many outside interests and commitments the teacher functions only partially as a member of an academic community—the wide range of personal relationships and interchange of ideas, transcending departmental and faculty boundaries, which are necessary to give such a community creative life are generally absent and therewith one of the most important cultural functions of the university is inoperative. While as individuals university teachers are involved in social as well as other commitments outside the university, they are not in a position to give sufficient time and effort to build up the university as socio-cultural centre, as well as a seat of learning, in the sense of making it play a truly effective role in extension work, adult education, serving as a patron of the creative arts, and able on request to carry out research related to current problems referred to it. Finally, it also means that the relatively small number of highly qualified staff have little opportunity of influencing their departmental colleagues.

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[1] This question is also discussed in some detail in Chapter 11.

[2] J. Robert Oppenheimer, 'Science and the human community', *Issues in University Education*, p. 61; edited by C. Frankel (New York, Harper, 1959).

Efforts to meet these problems are generally more *ad hoc* than co-ordinated. Short-term refresher courses, in-service and sandwich training schemes, special language-training courses, expansion of enrolments in education faculties and teacher-training colleges are each undertaken in response to specific requirements without reference to the general situation. Even research on associated educational problems tends to be compartmentalized. Among remedies applied to deal with the shortage of teachers at the secondary level have been the recruitment of teachers from abroad, waiving the need for professional qualifications, as Cambodia does in the case of graduate teachers; accelerated courses in teacher training in Cambodia and Viet-Nam effected by reducing the period of training; the suspension of full-time courses and the reduction of teacher training to in-service courses as is done in Singapore; or lowering the standard of recruitment, a policy adopted in Malaya to secure teachers of the national language.

On the other hand, some more constructive measures have also been undertaken or proposed. Thus at the University of Saigon the Faculty of Education has both increased the period of study for a first degree from three to four years[1] and established a training course providing two-year evening courses for teachers of the first cycle of secondary education. Furthermore, university teachers acting as educational advisers are to tour the nation's secondary schools and help young teachers to complete their training in the classroom.

In the Philippines, while all teacher training takes place in the public and private universities and colleges, and the Graduate College of Education at the University of the Philippines plays a leading role in undertaking educational research, standards vary considerably among the private institutions and so far no effective means of controlling these have been devised. The

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[1] As from 1965 the course is to begin with a propaedeutic year at the Faculties of Science and Arts, followed by a competitive entrance examination for a three-year course at the Faculty of Education.

Philippine Public School Teachers' Association proposed:[1] (a) a law authorizing the Department of Education to prescribe admission requirements for all teacher-training institutions—in order to improve the quality of new recruited students; and (b) a Civil Service examination for teachers before they are admitted to practise in schools.

In Indonesia, all teacher training for the secondary level, including special government in-service training programmes has been centralized under an institute of teacher training and education (IKIP), with four regional branches controlling a total of twenty-two sub-branches. But while the faculties of education would thus no longer be under the administration of the universities of which they were formerly part, they are to maintain their academic links, and the 'presidiums' of the regional institutes include a significant number of university professors. It is considered that at least for the time being this temporary measure will make it possible to concentrate more resources on teacher training, share facilities more adequately between different regions and types of training, and thus improve recruitment. It is, however, thought in some quarters that this should be a temporary measure and that the faculties of education should ultimately rejoin the universities. At the same time the older-established universities are developing affiliation programmes with new foundations, which, among other activities, arrange teacher exchange on a semester basis, interchanging senior teachers from the old with less experienced teachers from the new universities, and thus promoting a two-way process of advice, guidance and informal training.

In Thailand the College of Education and the Faculty of Education at Chulalongkorn both established an alliance in teacher education with the University of Indiana.[2] The programme stressed quality, both in training and in developing research, building up the quality of faculty staff so that ultimately at least 90 per cent of them would have second degrees and some research experience. Study abroad was arranged for fields not covered by the programme, and the subject content of the curriculum was increased at the expense of method from 30 to 70 per cent. The College of Education, with its two branches, has also developed a large-scale in-service training programme of evening classes. However, concern was expressed that 'the "multiplier" potential of these institutions has not been used extensively.... The larger purposes of the Contract will be achieved only when these institutions play their full leadership role in modernizing the total educational system of Thailand'.[3]

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1. *1963 WCOTP Theme Study—Conditions of Work for Quality Teaching*, developed by member organizations and presented to the twelfth assembly of delegates, Rio de Janeiro, August 1963 (Washington, World Confederation of Organizations of the Teaching Profession).
2. *A Co-operative Venture in Teacher Education, 1954-62*. Joint contract between the United States Department of State, Agency for International Development, the Government of Thailand and Indiana University. Report prepared by Indiana University, September 1962.
3. ibid., p. 100.

In Malaya a proposal has been made to introduce two-year sandwich courses for teacher-training which would develop links between the training colleges and the sixth forms of secondary schools in such a way that trainees would spend alternative semesters in college and school, with professional subjects taught in college, both content and teaching practice being obtained in the sixth forms under the guidance of specially trained teachers. This would enable the training colleges to double their enrolment even with current facilities and develop a useful link between the colleges and the secondary schools offering teaching practice. However, three aspects of the suggested arrangement appear open to question. First, it would probably mean that the subject knowledge of lower secondary-school teachers would be at sixth form level. This may be justified as an emergency measure created by the comprehensive school programme; but it is doubtful whether, if steps are not taken to supplement this with in-service university-level courses for at least a significant proportion of such teachers, the quality of the teaching will be satisfactory. Second, it may be questioned whether such a system would be welcomed by schools which have at present a high standard of sixth form work. Further, it implies that the university will continue to remain aloof from this level of teacher training. The Final Report of the Special Committee on the Training and Supply of Teachers for Comprehensive Secondary Schools (June 1964) maintained (p. 2) that the committee could not confine their deliberations only to specific needs of comprehensive secondary schools, and that it was necessary to review the teacher-training programme as a whole to ensure that the training programme proposed would fit within the framework of a sound national system of teacher training. But the report goes on to deal only with non-graduate training without attempting to consider the present and possible future teacher education functions of the university, an omission which is far from entirely explained by the fact that steps to establish the School of Education at the University of Malaya were taken only in 1962.

Even with the efforts to co-ordinate teacher-training and raise its quality which have been briefly reviewed, improvised responses to meet emergency situations have predominated. If the quality of education as a whole is to be raised—and without this education will do little more than produce 'a vast population able to read but unable to distinguish what is worth reading'[1]—it is essential that the country's highest centres of learning should be fully involved. This, with an exception for interim expedients, was unanimously recommended by the Unesco Meeting of Experts to Consider Means of Improving the Quality of Education in Asia[2] in its following two conclusions: (a) 'The training of secondary school teachers who will have to teach at the pre-university level should be a matter for the universities, and colleges for the training of primary-school teachers should also fall within the ultimate academic jurisdiction of the universities, which should be responsible for the trainees' final certification as teachers.' (b) 'Secondary-school teachers should have a minimum of four years of education beyond the secondary stage, but in a period of expansion this period may have to be considerably reduced.'

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[1] G. M. Trevelyan, *English Social History*.

[2] Manila, Philippines, 21-28 April 1964; *Report*, p. 15 (Unesco/QUEDAS/8).

The United Kingdom's McNair Committee on Teachers and Youth Leaders[1] as long ago as 1944 put the case in terms which appear equally applicable today in South-East Asia even though there were two different opinions on how direct a controlling role the universities should play: 'As centres of study and research they (the universities) ought to give education a high place in their range of studies, and as institutions maintaining high cultural standards, they ought to exercise a profound influence upon the education of teachers... the universities have an obligation to the whole educational system. Their vitality depends in part upon the kind of education given in the schools, both primary and secondary; and the schools, in turn, look to the universities for some measure of leadership in educational, as distinct from administrative, matters. There is no more significant way in which this mutual dependence can be expressed than for the universities to play a leading part in the initial education and training of teachers and for them to maintain a creative relationship with practising teachers and others concerned with the conduct of the schools.'[2] One view considered that universities should accept full responsibility for teacher training, another maintained that administrative flexibility would be preserved by the retention of separate identities for training colleges and university training departments, since contact and co-operation between them could be increased both directly and through regional joint boards of education and a central training council. Furthermore, since the universities' other major tasks were already so heavy and numerous, it was not considered either practicable or desirable that they should accept responsibility for the training of all teachers. The protagonists of this view were, however, also quick to add that it is peculiarly the duty of universities to carry out research and investigation in the theory and practice of education, because so many educational problems are not the sole concern of a department of education but involve collaboration with other university departments, such as those of philosophy, psychology, theology, physiology, social science or studies, fine arts, music and physical education.

As the highest centres of learning and to the extent that they are not mere curators or critical observers of culture, but creatively involved in the evolution of cultural values, the universities as a whole, and their education faculties or schools in particular, must seek out and provide opportunities for teacher trainers—both within and outside their walls—to partake of their adventures in the realms of ideas and discoveries. Their support, co-operation and hospitality should be offered to teacher-training colleges and other facilities and programmes for teacher training. not only at the secondary but also at the primary level. Here the understanding of the child—his physical and mental development—and the process of learning, are both the foundation of all further education and matter for the psychologist, the neurologist and the paediatrician—specialists seldom to be found on the staff of a primary teachers' training school.

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[1] *Teachers and Youth Leaders.* Report of the committee appointed by the President of the Board of Education to consider the supply, recruitment and training of teachers and youth leaders, chairman Sir Arnold McNair; 1959 edition, p. 28-9, 50 (London, HMSO).

[2] This second part of the quotation is part of one of the two opinions separately recorded, but so far as it goes is largely in line with the other view.

Accordingly, universities must be involved both in the over-all national planning organization and all educational programming concerned with teacher training. Such a role may be played in different forms, but it does require a basic minimum of effective interrelationships between the universities and teacher-training colleges, post-secondary technical and vocational institutions, schools and—at least equally important—between the universities themselves. Again the mechanics may vary, but:

1. There must be a continuous channel of consultation between the various institutions.
2. Courses assisting and supplementing each institution's programme should be organized, with a consequential regulated circulation of students between various specialist courses.
3. Joint seminars and workshops should be conducted on questions of common interest.
4. Research projects should be promulgated in which maximal use is made of the potentialities of the various institutions available, particularly in the case of secondary schools, where research as such is not likely to be initiated, save perhaps by a few individual teachers.
5. Some exchange of teachers would be desirable for anything from a short series of lectures to periods of a semester or more, but preferably as part of an integrated programme involving university faculties of education, teacher-training institutions, and secondary schools.
6. Studies should be made of methods of selecting and training the staffs of training colleges preparing teachers for primary schools. This might well be a responsibility of university departments of education.
7. It would be essential to set up special joint committees, with appropriate ministerial participation, to enquire into organizational and administrative questions—particularly those dealing with problems of the movement of students between institutions—and to review the results of educational research and their application to the education system as a whole.

The university faculties of education should not only be in the vanguard of qualitative advance and creative innovation, but also able to supplement and orient their curricula and research to meet shortcomings or problems which, at a given moment, other institutions of higher teacher training are either not competent or equipped to tackle. Indeed, university research in education needs to be fully comprehensive, extending all the way from the elementary to the highest levels of the educational process which interestingly enough have been by far the most neglected: evaluation and measurement cover only a small area of the available field.

Two specific fields of teaching in which universities must, because of their facilities, bear special responsibility are in the teaching of languages and of natural sciences to teacher trainees—both to staff intended for teacher-training colleges, and also to those destined for senior, if not all classes, in secondary schools. Here, apart from a constant effort to achieve the most effective training of specialist teachers, much could be done to relieve shortages, as well as to broaden the vision of all teachers, by giving them not only a basic command of the language of wider communication, but also some understanding of the teaching of it; an insight into scientific method, and a fair grounding in at least one scientific subject.

Another set of special tasks for the university emerges from three current needs: (a) for periodical courses to keep teachers in touch with developments in their subjects and in methods of teaching; (b) for the re-training of the under-qualified and the further education of able teachers to attain higher qualifications; and (c) for assistance in meeting urgent teacher needs in the face of rapidly expanding enrolments. For the first, the universities, acting in collaboration with other relevant institutions, should play a leading role in planning, designing and setting up appropriate courses. Only some of these, particularly in the scientific field or in direct relation to ongoing research, may be sited at the universities; others could, and indeed should, be given in teacher-training colleges and extra-murally. In assisting to meet the last two demands, with their very wide range, the universities should undoubtedly be particularly careful not to become directly involved in accelerated programmes to the point where, through over-taxed resources, their regular teacher-training programme suffers. Their main task here may well be to restrict themselves to research and pilot projects to evaluate and improve different techniques under varying conditions and to work out applications of these in consultation with other teacher-training institutions. For all three purposes, universities may consider establishing correspondence courses for teachers in service, which, where feasible, should be combined with short periods of residential training. In this connexion it would, however, be most important to make sure that the costs of such arrangements, including the demand on staff time, do not in the end exceed those of regular courses. At the University of Delhi, which initiated a series of correspondence courses at the end of 1962, it was found that the per student cost for the correspondence course was far in excess of the regular course, and it was expected that four years would be necessary to reach comparable costs.[1]

Finally, as an essential condition for the realization of their potentialities, the universities need to secure adequate numbers of high-quality staff, and equally adequate financial provision to do so: the requirement has organizational and administrative as well as educational implications.

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[1] International Association of Universities, *Bulletin*, Vol. XI, 1963, No. 1, p. 41.

It is generally agreed that a good university teacher must, among other qualifications, have had research experience and should, in general, be expected to combine research and teaching with a mutual enrichment. But, at present, research facilities and work in most South-East Asian universities exist on a very limited scale, particularly in the scientific and technical fields. Over-worked teachers have little time for it; the encouragement of research at undergraduate level is accordingly minimal; only a very small proportion of graduates remain for post-graduate work, and the best of these prefer to go abroad for further studies. Certainly international academic exchange and mobility are clearly desirable and should go on, but not to the point where new and developing universities are deprived of their own research potential and initiative. Furthermore, the costs involved in continuing to rely primarily on study abroad to secure high-quality university teachers are of a higher order. Thus the Indiana University contract team in Thailand[1] points out that, according to comparative figures available for 1957, 'the cost of educating each scholarship holder in the United States was 348 times the cost of educating him at Chulalongkorn University . . .'[2] and that 'during the seven-year period, 1951-57, the Thai Government spent enough on foreign study to provide one year of study at Chulalongkorn University for 161,185 students'. The counter-consideration that improving facilities and expanding research would steeply increase the per student costs of home universities[3] is more than met not only by the magnitude of the differential (in part because of travel costs), but also by the very great benefits such improvement would confer on every facet of higher education. Such a policy would help to infuse a genuine academic spirit among students and attract them to the university teaching profession, while also raising its prestige; to dissuade the most interested and capable research workers from preferring to work in other establishments with good research facilities, at home and abroad; and to ensure that the research orientation of the teacher is appropriately in tune with both the pressing problems that face the nation in his field and the comparatively limited apparatus of which he must make the most. In other words, no university will be equipped to meet its staff requirements and set high standards unless it gives a top priority to the development of research.

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[1] *A Co-operative Venture in Teacher Education*, op. cit., p. 102.

[2] The figure of 348 appears fantastically high. Further enquiries suggest a typographical error, and a revised figure of 20 : 1. Even so, the point remains.

[3] This, incidentally, is a factor which if left out of cost estimates of projected expansions makes them dangerously misleading.

INTERDISCIPLINARY RESEARCH[1]

The underdeveloped countries cannot afford the time for gradual adjustment. They are obliged to assimilate decades of technological innovation without respite. Consequently they must diagnose what is happening and study how to reconcile economically necessitated social change with transmuted cultural values that touch the mainsprings of behaviour. Indeed this is, after all, only an acute condition of a universal situation which has been described by Oppenheimer:[2]

'There are two traits of this world that I would stress, two things which seem to me to mark it off from past times. . . . The first thing I would single out about the present scene is the overwhelming predominance of things that are new over things that are old. This is, of course, a consequence of the fact that knowledge doubles every ten years. It expresses itself in the fact that no professional man can really be any good if he does not, either by formal schooling or by reading and his own efforts, really keep at school constantly. . . . And this phenomenon shows itself, of course, not only in matters of sheer knowledge. The application of knowledge changes the face of the earth. . . . And this imbalance between the new and the old, although it is not beyond endurance for man, is something to which man is unaccustomed and for which his tradition has not fully prepared him.' This is an eminent Western scientist speaking about the West, which has had well over a century to adjust to the snowballing advance of technology. 'If we look at what is known, the proportion that is known by specialized groups is very large, and the proportion that gets back into the common knowledge of man is very small. . . . We have, then, a predominance of novelty on the present scene, and also an absence of common knowledge, or at least a thinning of common knowledge, together with an enormous growth of specialized and available knowledge, but not vital, living knowledge.' This, Oppenheimer points out, has an inevitable effect on values, 'For whatever values may be, they rest in areas of life which are familiar and deeply intimate. . . . On the one hand, they are commitments, commitments as to where one stands, and where one acts, and what one will be, and what one cares for. On the other hand, they always involve memories. Thus, in values, commitment and memory unite the past and the future.'

It is the failure to achieve this synthesis which is perhaps the greatest single obstacle to social and economic progress in the region, while education looks on with scarcely a word of comment. Even the self-conscious strivings toward renovating cultural tradition and fashioning national identity are rather symptoms of a malady than an effective movement to bridge the gulf between past and future, between modern processes and traditional attitudes, between the expertise of the trained and the wisdom of the ignorant. Meanwhile, if social disparities and internal maladjustments do not grow, they at least remain untouched while the universities remain silent or silenced—undelivered of critical analyses or constructive ideas for the resolution of social and cultural problems, the fruits of creative imagination.

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[1] This is the first of several sections of the report devoted to various aspects of research. See also p. 267 (non-university research institutes), p. 378-87 (teaching and research), and p. 419-24 (a regional research institute of higher education and development).

[2] Op. cit., p. 56-8.

Next to the quality of their teachers, the most important single factor enabling universities to perform such a function (if they are free so to do) is the extent and depth to which they engage in interdisciplinary research. It is true that specialized research on isolated problems must remain basic as a method. Intuition can apprehend possible broad answers to complex problems, but, in order to achieve workable solutions, the problems must be broken down into their component parts and subjected to the application of appropriate specialized knowledge. But this must be supplemented by a synthetic approach that in various crucial areas co-ordinates the selection of problems and correlates the results of research on these, both to provide comprehensive data for balanced action and to discover mutual implications for further research. From the socio-cultural viewpoint, this in general terms means that not only various social science departments, but also those in other faculties—in particular the humanities, medicine, agriculture, and technology or engineering—need to combine resources and conduct team research to understand what is happening in current social situations, diagnose tendencies, and give a prognosis for the future; to determine desirable new directions for change and suggest the scale and kind of action and further research which their achievement seems to require; and to work out feasible measures to promote selected development goals, whilst appreciating that these will, of course, be chosen on the basis of national policy and therefore involve political factors. And perhaps a further objective should be added, even though it is implicitly contained in the last two: to compute, as far as data will allow, the minimum social change needed to achieve a sufficiently lasting impetus in the desired direction. Emphasis on this rather obvious detail is relevant not only because of the crucial importance of conserving scarce resources of finance and trained manpower, but also because, at least in the present state of knowledge, it is dangerous for anybody to initiate major social changes in one sphere when far from prepared to deal with, and perhaps even unaware of, its repercussions in others.

But if the needs for such research are great, the difficulties are great too, and it would be a major error to think that all that is needed to establish an interdisciplinary approach is appropriate organizational and administrative action, which can be effective only where the enthusiasm of academic staff is aroused and committed to active co-operation. At first, fixed departmental attitudes and established habits would probably make it desirable to proceed gradually, so as not to disrupt current work and to allow for experimentation to establish efficient procedures. However, from its initiation the interdisciplinary research undertaken should begin to influence the orientation of university education, which in turn should produce more and more university teachers imbued with the desire and the ability to investigate the interrelationship of their special interests with other areas of inquiry and to begin to participate in interdisciplinary team work. While such a process would become cumulative, it need not, and indeed should not, mean that all research would fit into co-ordinated plans, let alone be adjusted solely to social needs. Research dictated solely by specialized interests following up promising leads to new knowledge without immediate concern for its implications must clearly continue if the spirit of free inquiry is to flourish. Apart from balance between such research and the interdisciplinary investigations, what is important here is that its results should not remain isolated, and that there should be a continuous examination of their wider implications, and, where appropriate, the incorporation of these into planned interdisciplinary research.

Within the region the fact that the development of research is still largely in its initial stages, while creating difficulties in terms of finding adequately trained staff, also presents an opportunity to introduce and consolidate interdisciplinary approaches and procedures while patterns of research are still fluid. However, such flexibility is not likely to last long, and the need to act quickly in setting and promoting the right directions and trends for research cannot be over-emphasized.

The general need for such co-ordination has of course been recognized by all countries in the region; but this on the whole expresses itself more in action taken outside the university and in forms which, apart from promoting collaboration between specialized disciplines within major fields like the social sciences, agriculture, technology and medicine, mainly concentrate on national policy with a view to determining and integrating administrative arrangements and financial allocations. In each country there are a number of non-university research institutes devoted to more or less specialized work; for example: Burma: Union of Burma Applied Research Institute, including a Technical Information Centre and the Atomic Energy Centre and the Burma Law Institute; Cambodia: Institut National d'Etudes Légales, Politiques et Economiques and the Institut National de Civilisation Khmer; Indonesia: National Institute for Economic and Social Research and the Forest Research Institute; Malaysia: Institute for Medical Research and the Rubber Research Institute of Malaya; Philippines: National Institute of Science and Technology and the Food and Nutrition Research Centre; Thailand: Applied Scientific Research Corporation of Thailand and the Royal Institute of Arts and Science; Viet-Nam: Oceanographic and Nuclear Research Institute. During the last decade, national research councils and centres have been set up in several countries. In Indonesia, the Council for Sciences of Indonesia (MIPI), which since 1962 has been attached to the newly created Ministry of National Research, advises on the co-ordination of research and is now charged with setting up a National Research Centre incorporating the following national institutes: Chemistry; Physics; Instrument Centre; Metallurgy; Electro-technics; Biology; Economic and Social Research. In addition, four specialized Science Councils for medicine; agriculture; technology; and economic, social and cultural research also advise the Ministry of National Research, on priorities within their own field. Apart from playing a role in the provision of research allocations for universities, the Science Council and the Ministry of National Research have no formal links with universities and the Ministry of Higher Education and Research, but draw heavily on the assistance of the staff and facilities of these bodies, and the institutes co-operate closely with university faculties. The Institute for Economic and Social Resarch started its research programme by contracting out projects 'to encourage faculty members and students to carry on research'. But while these have covered relations with faculties of economics, teacher training and agriculture, the research projects involved have been on isolated problems with no noticeable attempt at an interdisciplinary approach.

In the Philippines, the situation is complex and the University of the Philippines is the only institution in the region to have introduced administrative measures to promote co-ordinated research. There are two national advisory scientific organizations, the National Research Council, whose main administrative office is situated at the University of the Philippines; and the Science Foundation of the Philippines. The National Science Development Board (NSDB) is the top policy-making body and 'along with its two implementing agencies, the National Institute of Science and Technology and the Philippine Atomic Energy Commission, plans the over-all programs of scientific and technological development geared to achieving national progress. . . . Committed to promoting qualitative and quantitative excellence in science efforts, it accepts its full obligation to help, in all ways possible, the institutions of higher learning. . . . Realizing that its research agencies must draw their supply of scientific manpower from those initially trained in colleges and universities, the NSDB becomes rightfully concerned with the nature of science graduates colleges and universities produce. . . . It wishes to insure a bipolared competency of our students not only in science and technology but also in the humanities and the social sciences'.[1] But despite the emphasis on higher education and training, there is no explicit reference to the development of interdisciplinary research.

At the University of the Philippines, apart from the integrating function of a Community Development Research Council, there is an Office of Research Co-ordination, headed by the executive vice-president of the university, whose objectives are to stimulate and promote research by providing incentives and stimuli in the form of financial and clerical assistance and to promote co-operative work among university units and between the university and external agencies. It is assisted by three committees: the Committee on Research, which determines policies and operations governing research in the university; the Natural Sciences Research Committee; and the Social Sciences and Humanities Research Committee. The two last serve 'as screening and evaluating bodies charged with the duty of selecting, evaluating, and recommending research proposals of faculty members seeking support from the university. They are also in charge of studying and developing research programmes in their respective fields'.[1] The guiding influence that such an organization could exercise to promote interdisciplinary research is obvious, but an examination of the abstracts of research projects supported by university funds suggests that none of them form part of a concerted attempt to deal with interrelated aspects of a scientific or social problem.

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[1] *The National Science Development Board and Higher Education*, p. 12, 5, 14 (Manila, NSDB, 1961).

In Thailand, the National Research Council (1956) is charged by Act of Parliament with defining national policies relating to scientific matters as well as initiating and supporting research within and outside universities. One of its specifically stated functions is 'to co-ordinate research activities in various branches of science', and in addition to various scientific and technical divisions it also comprises others devoted to philosophy, jurisprudence, political science and public administration, economics, and sociology. But again the research that is carried out shows little evidence of the realization of this body's co-ordinating potential.

In Viet-Nam, a National Centre of Scientific Research was established as an autonomous governmental organization in 1962. Its stated purposes are 'to act as a National Research Council in co-ordinating, stimulating, and helping scientific research work in the whole country and to build up and manage new research institutes created according to the need of the country'. This centre does not at present cover the social sciences, and apart from some reliance on the services of university staff, its only direct link with the university appears to be that the chemistry and botany laboratories of its Institute of Natural Substances are located at the Saigon Faculty of Sciences.

Certainly, then, co-ordination is stressed as an objective, and within some major fields this is achieved, especially through individual university and non-university institutes, but in general the departments lead isolated lives and there are no consistent efforts to organize interdisciplinary work, although in at least four countries the machinery to encourage and promote this is available. Indeed, the 1959 Regional Meeting on Scientific Research organized by the Unesco Science Co-operation Office for South-East Asia[2] came to two conclusions which seem to minimize the importance of co-ordination, although they also noted that the Science Council of Japan covered not only natural sciences but also the humanities and social sciences, which 'makes possible a very useful co-ordination of views in those fields where development of the natural sciences impinges on political and social problems, e.g., atomic energy'. First, in discussing types of research most suitable for universities, government ministries and national research organizations, the meeting agreed 'that a certain degree of duplication is not undesirable as the chance of finding satisfactory solutions to a problem is greater if there is a diversity of attack. There is, of course, an over-all need for co-ordination for the sake of financial economy, but this should not be stressed too greatly ...'. Then it was recommended that 'university departments should be encouraged to carry out research on subjects in which they are interested and should not in normal circumstances be asked by governments to find solutions to immediate problems. In some cases, of course, the interests and skills of a university department would be such that they could be applied to a practical problem of interest to the government. The important point, however, is that the university autonomy should not in any way be violated'.[1]

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[1] *Annual Report of the Office of Research Co-ordination for the Academic Year ending May 31, 1962*, p. 4 (Manila, University of the Philippines, 1962).

[2] *Regional Meeting on Scientific Research (Bandung, Indonesia, 9-12 December, 1959), Final Report*, p. 3-4.

While academic freedom is universally acclaimed as essential, it may also be postulated that universities have a responsibility in relation to urgent problems of social and economic development, and if they are not making their potential contribution to the solution of these it is not so clear that governments would be in error in asking for more co-operation and encouraging it through channels such as national research councils and the allocation of research grants.

Many of the most urgent social and educational problems cannot be dealt with by any single discipline, since they involve custom and tradition, attitudes and motivation, technology, economics, health, mass communication, administrative organization, and education. In the broad social field, they may be found in family planning, agricultural productivity, social mobility, community development, urbanization, the geographical distribution of high-level manpower, national identity and language. In education, apart from teacher-training questions which have already been referred to, there are the problems of academic wastage at all levels, the educational needs of rural areas, the democratization of education, the education of women, the siting and size of institutions of higher education, and, to complete the circle, the organization of interdisciplinary research.

Social and economic examples

Family planning is more than a matter for maternity clinics, social workers and the discovery of the perfect pill, though even such a limited approach requires co-ordinated research. Account also needs to be taken of demographic factors, social and individual behaviour patterns, the economics of the manufacture and distribution of contraceptives, the use of adult education and mass media, the organization and administration of country-wide services, the impact on values. This, in addition to investigations by departments of sociology, medicine, public health, and pharmacology, requires research by departments of economics and commerce, mathematical statistics, public administration, philosophy and religion.

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[1] This recommendation would scarcely be well received, for example, by many universities elsewhere constantly seeking for applied research contracts to support the phenomenal general growth of their institutions and their increasingly inadequate endowments.

Agricultural productivity, particularly in the wide sense of encompassing diversification, depends on the application of appropriate agricultural methods, but this in turn involves social, economic, and technological factors, including the output of appropriate fertilizers and suitable farm implements, and, in addition to agricultural investigations, requires basic research in organic chemistry and biology. Both development policy and extension work that is not supported by such multi-directional research and does not follow up its findings can at best achieve only limited success and is more than likely to involve costly errors.

The question of *social mobility* needs to be studied not only from the demographic, social, economic, and psychological angles, but also philosophically, in terms of its impact on values, cultural development and the educational implications of this.

Because of the progressively increasing dangers of *rapid technological advance and industrialization* leading to unbalanced, overcrowded and ugly urbanization, there is special need to view this in a long-term and historical perspective as well as to provide a comprehensive range of research that would facilitate balanced development both for the country as a whole and for individual towns and cities. Thus questions of siting and building up industrial complexes and commercial centres must not only be studied in their economic and technical contexts, but also in relation to their social, educational and cultural implications, which include town planning and housing, the establishment of educational, cultural and recreational facilities, social welfare and public health services, the organization and management of mass media, protecting the individual and the arts from submersion in admass. Co-ordinated research ranging over a great variety of disciplines is essential if these problems are to be adequately handled and the developing countries enabled to make the most of their one great advantage—the possibility of avoiding the major errors of the past.

It may be suggested that the *maldistribution of high-level manpower* is an even greater hindrance to development than its shortage. Exhortation does not solve the problem and compulsion is, at least in part, a self-defeating measure. If an answer to it can be found, it will have to be in the context of questions raised with regard to social mobility and community development, and through intensive studies of interrelated social, educational, psychological and economic factors.

The issues raised by *national identity and language* obviously require intimate collaboration between humanistic, aesthetic, social and educational disciplines. There can be no creative national identity if it does not express itself coherently in these different fields, which in turn, singly and together, need to reflect the evolving unity underlying the diversities of the nation. The national language will not be freed of artificiality until its manifold social and cultural roots are secure and its use in all fields is unstrained and effective. It is also essential that, where for some appreciable time to come much of scientific education and research will continue to be conducted in a foreign language, the national language does not become cut off from scientific thought and development. Accordingly, scientists must actively share in the concern for these cultural developments, and their views must be taken into account in the work of sociologists and humanists with whom lies the primary responsibility for dealing with questions of national identity and language.

Educational examples

Not only does *academic wastage* at all levels—though more particularly at the post-primary stages—need to be studied within the context of education as a whole, its economic, social and psychological antecedents and consequences also demand co-ordinated investigation. Having determined the nature of shortcomings, it is a question of finding the best possible solutions under given conditions. The conditions must therefore be understood. These are not static; and within limits, it is possible to stimulate and support change in one or another direction. Thus the complementary study of relevant non-educational factors is important because it is only through these that the extent of the need for change can be demonstrated, including, for instance, changes in the attitudes of parents and financial provision for assistance to needy students (in the form of school meals as well as study materials and scholarships).

The educational requirements of rural areas present special problems which, emphasizing the need for an interdisciplinary approach, are based on the fact that at present and for at least the immediate future, a majority of the school-age population of rural areas is destined to receive no more than a primary education. There is therefore a desperate need that a fair proportion of those few who do gain a post-primary education including, in still fewer instances, those who go on to the tertiary level, should return to work in the rural sector rather than, as at present, become absorbed in the urban areas. Both situations must be viewed in relation to the kind and extent of adult education and extension services that can be provided to supplement what has been achieved with four to seven years of education.

Accordingly any study of the situation must relate the village school and its teachers to all aspects of community development—not least, it might be added, because a fair proportion of the operational costs of the school may, and perhaps should, be met by the village community, and it must come to understand and support the teacher's vocation.

The development of *educational facilities for girls and women,* viewed as a special problem, largely resolves itself into socio-economic and cultural issues which require co-ordinated investigation as such. But there are special educational questions such as, for example, what evidence, if any, is there that for women certain educational opportunities should be more accessible than others? How far do women compensate for giving up the vocation for which they have been educated by the nature of the influence they exert on their family and community? What special re-training facilities need to be made available for married women to draw them back into professions they have given up, especially teaching? What are the emerging social, economic, and political consequences of increasing educational opportunities for women? What are the remaining barriers to equalization of opportunity and how may they be overcome? What justification is there in providing equal training facilities, and subsequently equal pay, for men and women, if the initial average professional life of a woman is comparatively brief, to be interrupted if not terminated by marriage and child-bearing? What have the sociologist, the anthropologist, the psychologist, and even the scientist, as well as the educationist, working in consultation with each other, to say on these questions?

In the problems associated with the *transition from rural schools to advanced educational facilities* in urban areas, few studies have been made to determine the special difficulties encountered by rural students and to indicate possible measures to counter these. But frequently various disadvantages are encountered: the standards of rural schools are in general lower, rising significantly from village to district town, to the provincial capital, and finally to the major cities, so that even the exceptionally gifted rural student is somewhat handicapped in competitive admission examinations, and on entrance, finds himself struggling to keep pace, especially in the use of the language of wider communication. For those who seek to go on to the university, this process recurs, since there are for the most part no higher secondary schools outside the big towns. In evaluating the performance and drop-out of rural students, it is essential to study the psychological impact of this situation and to seek out feasible remedial measures in the form of minimum admission quotas, special tuition and counselling, and more individual attention to help such students overcome their difficulties. The importance and extent of such measures will depend on an assessment of both how great the effects of current quality differences are, and on the outlook for removing or at least minimizing these, which for the near future is likely to be dim in most cases. But there are also non-academic factors which are no less important—the problems of accommodation and increased cost of living in the towns; the prevalent lack of an educated family background; the frequent parental resistance to girls continuing their education, especially away from home; the contrast between city and village life. These are questions to which answers will be found only if educationists, sociologists, psychologists, and economists act in unison.

It is necessary to ask how far and in what way do social and economic needs and objectives favour *a wide spread of institutions of higher education*? What, if any, types of higher institutions should be established in rural areas? What are the comparative costs of expansion and setting up new institutions at various levels of anticipated enrolments? What are the relative merits of siting universities either in areas with developed social and cultural facilities or in those where they may promote the growth of these? Should the nature and offerings of institutions of higher education reflect the life, needs and occupational opportunities of the areas in which they are set up? How are problems of staffing and quality to be weighed against social and political considerations in siting an institution? Can architectural norms be established in terms of types of institutions and their enrolments? Here, in addition to a wide general approach to these questions, it also seems desirable that they should be thought out from the viewpoint of each of the major disciplines, for their preferences are unlikely to be the same and should appropriately influence over-all decisions.

All that has been said stresses the need to evaluate the *potentialities of interdisciplinary research* in specific national situations, and to study how it may best be organized within the context of these. This at least is indubitably a task which universities must perform, not necessarily, or even desirably, altogether on their own, but in consultation and co-operation with other national research bodies and institutes. Such an evaluation would involve a study both of the appropriate roles for graduate schools, university institutes, faculties, departments, interdisciplinary academic committees, and inter-university collaboration in planning research projects, and also of the relative activities of interdisciplinary research within and outside the university, the possibilities of these effectively complementing each other, and suitable forms of co-operation between them.

UNIVERSITY EXTENSION AND EXTRAMURAL WORK

In so far as the concept of the university as located in an ivory tower remote from the heat and burden of the day ever existed, it was justified not merely in terms of a single-minded search for truth, but also in the contention that only through aloof dedication could the university render its service to man and society. Today, though scholastic isolationism is still considered desirable for the particular purposes of academic freedom and research, a direct responsibility to society is clearly manifested both from the universities' desire to secure an increasing amount of public support for higher education and also from a genuine anxiety to render practical services in solving those immediate problems which they are best fitted to tackle. In the developing countries in particular there is also the feeling that in reaching outside its walls the university enriches its own life and work. Direct contribution to national development becomes a matter of principle, whose implications in practice need to be worked out in each situation.

These different aspects of the question are exemplified in the following observations of Dean Kasem Udyanin of Chulalongkorn University:[1] 'The university does not serve the society only in training its potential leaders. . . . The university must be alert to events going on outside the campus. It must be able to feel the needs and aspirations of different groups in the society. There are many ways the university can render its service to satisfy these needs. Besides giving them clear expression, it can offer extension or correspondence course programs to interested persons, organize seminars, symposia, special lecture series and many other kinds of service to the community. The university will find itself benefiting a great deal from these activities. At least these will enrich the cultural atmosphere on the campus and make academic instruction more realistic. . . . The university must utilize all kinds of mass media to reach the public and re-educate them so that they will have correct understanding of the role of the university. They must be convinced of the necessity to allocate more funds for university support. . . . Moreover, the return from this investment should not be expected immediately and directly.'

The potential field for service to the community is very wide and the resources of the university limited—indeed often limited to the point where even its internal teaching, training and research functions suffer in their quality and scope. It is not, then, surprising that universities are wary about undertaking additional responsibilities and programmes.

In the general field of adult education it is assumed that the eradication of illiteracy is basically the concern of community development agencies, whether rural or urban. A world-wide enthusiasm for the spread of literacy was one of the first major educational impulses at the close of the Second World War. Dr. Frank Laubach, for instance, campaigned around the world with the slogan of 'each-one-teach-one', an adaptable technique based upon letter recognition, and an evangelism which created great temporary enthusiasm wherever he went. But he was in great demand, and always on his way before questions of retention, continued motivation, and the demands of functional literacy became clamant. In almost all cases follow-up literature had either been hastily planned, or forgotten, and finances soon ran out. Major campaigns were in a number of cases government-sponsored—in

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[1] Kasem Udyanin, 'The role of universities in society,' *ASAIHL Seminar on University Organization and Administration, January 20-24, 1964, Report*, p. 163-5 (Bangkok, Association of South-east Asian Institutions of Higher Learning, 1964).

Thailand, in Indonesia, and, very notably, in Cuba. Nevertheless, as the Director-General of Unesco pointed out to the Second Committee of the General Assembly of the United Nations, fifteen years after the proclamation of the Universal Declaration of Human Rights affirming that everyone has the right to education, there were 500 million adult illiterates in Asia, Africa and Latin America (70 million of them in South-East Asia) unable to read the sentence in which this right is acknowledged. Moreover the rate of increase of population is such that though percentages of illiteracy may decrease, actual numbers of illiterates are rising at the world rate of 20-25 million a year, despite the expansion of school systems.

Some indication of the size of the problem in South-East Asia is afforded by the following figures abstracted from a table in *Education in Asia*, published in 1964 by the Japanese Ministry of Education.[1] The situation is certainly not underestimated as a number of the figures have been taken from census returns which go back as far, in one case, as 1954. The information is in respect of the population 15 years old and over, i.e., those who are beyond the reach of the primary school system (see Table 49).

TABLE 49. Estimated illiterate population, 15 years old and over (by thousands)

Country	Date of survey	Total illiterates	Male	Female
Burma	1954	710	134	576
Cambodia	1958	1 477	407	1 070
Indonesia	1961	31 820	11 581	20 239
Malaya	1957	1 869	625	1 244
Singapore	1957	413	142	271
Philippines	1961	4 140	1 877	2 263
Thailand	1960	4 829	1 540	3 289
Viet-Nam	1958	883	—	—

The United Nations having accordingly decided 'to explore ways and means of supporting national efforts for the eradication of illiteracy through a world campaign'. It is most significant to note that Unesco is to undertake a four-year experimental programme in eight countries 'covering the organized sectors of the economy, where motivations have greater vitality and stronger backing, for example in public or private businesses, co-operatives, trade unions and such organizations as village councils or community development projects.' Furthermore the Unesco Secretariat is 'to continue the research and experiments . . . on the languages to be used for literacy training and on the use of the new education media, especially television and programmed instruction, in the eradication of illiteracy'.[1]

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[1] Revised draft, May 1965.

Now the secretariat of an international agency functions most effectively through existing organizations in the Member States. The opportunity here outlined for what can still only be considered the initial approach to research into the problems of combating illiteracy (problems of language, teaching media and techniques, motivation, the training of staff, the preparation of material and equipment, the continual assessment of results, the development of follow-up reading material related to and developing from the original motivations) surely calls for and offers a challenge to the expertise, the resources and the co-operation of university staffs and students.

Vocational training for adults who have had little schooling is another area which at first sight does not provide suitable opportunities for action by universities. Nevertheless, faculties or colleges of education, agriculture, and engineering, could play a useful role in helping to set up, guide, and perhaps provide special courses to train or up-grade staff for such schools, in co-operation with relevant ministerial agencies and their training facilities, possibly making a fuller and therefore more economical use of workshop facilities which are seldom used to capacity.

However, the main sphere for university action in adult education is clearly to be found in providing appropriate opportunities for capable adults to improve their professional competence and enlarge their cultural background which, for one reason or another, they have been unable to do by taking up or completing full-time university studies. The point is further emphasized by remembering how large a number of students completing an academic secondary education are unable to enter the university and how many of those who do enter drop out before completing their course. Vast potentials of skill are thus wasted and the educational investments already made in them are left relatively unproductive. It is for the universities to play a leading role in developing at least the most promising of these potentials for economic as well as human reasons.

To some extent the need is already met in the region by evening and other part-time study facilities offered by a number of institutions, particularly in Burma, Indonesia and the Philippines. But there are two respects in which this provision is unsatisfactory and should be developed, though it need not necessarily follow the pattern of the American extension system or the activities of the British Workers' Educational Association.

With the exception of in-service teacher-training courses (e.g., in 'twilight'[2] classes at the College of Education in Bangkok and its branch in Bangsaen), and special courses provided by technical colleges or institutes (e.g., in evening adult classes at the Technical College in Kuala Lumpur), adult courses generally follow, though more slowly, regular diploma or degree-course patterns without any further consideration of the special needs of adults. Methods of teaching also usually conform to the lecture-based pattern adopted for full-time students. For some purposes this may be satisfactory, although as W. E. Styler, associate director of extra-mural studies at the University of Manchester, points out, 'trends in adult education during the present century have favoured the use of discussion as one of the principal methods of work'.[1] It is in any case not enough.

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[1] *Unesco Chronicle*, Vol. X, No. 7, July 1964, p. 236.

[2] A pleasing, if not particularly illuminating, euphemism for evening classes.

On the basis of explored needs of both employers and employees, there is a case for establishing both general and specialized courses tailored to specific types of requirements and suited to the adults' more experienced and mature ways of thinking and self-reliance. General courses in the humanities and social and natural sciences would primarily aim at widening the cultural background and developing qualities of responsible citizenship and leadership without necessarily being rounded off by an examination. Specialized courses would concentrate on the development of particular skills in, for instance, commerce, industry, social welfare work, and agriculture. One such course might be succeeded by several others but each should be complete in itself, as in many cases adults are not in a position to devote a long continuous period of time to further studies. Vocational courses should also lead to a qualifying examination for an appropriate certificate of proficiency needed both as an incentive and as a qualification for improved professional standing though appropriate recognition of this by employers may need considerable negotiation. In devision such courses, it would be more than desirable to secure the close co-operation of business and industry as well as various government departments, particularly in order to promote the co-ordination of university instruction with on-the-job training facilities.

One example of the scope of adult education work undertaken by the university of a developing country is afforded by the University of the West Indies. The main areas of its extra-mural programme comprise: (a) general education; (b) local studies, which include the organization of research involving adult groups; (c) special courses for the training of leaders in various fields; (d) classes in a wide range of cultural subjects. This programme is under the charge of a director[2] who has a full-time staff or resident organizing tutors in each of the various islands served by the university as well as specialist tutors in industrial relations, social work, radio education, and drama.

At present, activities in this field in South-East Asia are largely limited to the major urban centres, with some exceptions in the Philippines, and in the case of new institutions of higher education established or developing in outlying provinces in Indonesia, and at Chiengmai and Khonkaen in Thailand. Apart from those operated by the University of the Philippines, and in Indonesia for teacher training in the 1950's, none of the institutions of higher education has organized extension centres for extra-mural studies, and except again for the Philippines, and for a period of emergency teacher training in Indonesia, no systematic use has yet been made of correspondence courses. This means that in general only adults working in major urban centres are able to take advantage of opportunities for further education. The system adopted by the University of the Philippines is of interest in this context. Until the establishment of the Government Office of Adult Education in 1937 (later, in 1947, transformed into the Division of Adult Education), this university played a leading role in adult education through its President's Commitee on Literacy and Civic Education, set up in 1935. One of its first projects was to organize its alumni into a corps of volunteer workers who undertook 'several phases of adult education work during the summer vacation. By the end of the 1935 summer vacation 300 alumni taught more than a thousand adults how to read and write in their respective homes'.[1] In 1951 a full-fledged Extension Division was established in Manila and has since offered evening classes to accommodate working students, and in 1954 a Labour Education Centre was created as a pilot educational centre for workers, union officers and members, and is now to develop into a permanent Labour-Management Training Centre, assisted by USAID, the University of Connecticut, and the National Economic Council. In 1962 the Office of Executive Vice-President for Extra-Mural Studies was created and a department for such studies organized to 'take charge of extension classes of the university in places where the university does not have established branches and in other sites that the president may designate'.[2] Courses are mostly of the same type as those offered at the university, covering both undergraduate and graduate levels, and studies are 'conducted by professors of the university who are detailed to those places where the studies are conducted. After meeting the students for a brief period where an explanation of the course is given and the reading assignments are issued, the students are left to study and read by themselves for a determined period, after which the professor returns to assess the acquired knowledge of the students.... For work equivalent to those performed by the students on the campus, these extramural students earn equivalent credits on similar subjects'.[3]

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[1] W. E. Styler, 'Adult education—a link between university and society', *Science and Freedom* (London, Committee on Science and Freedom, 15 June 1960).

[2] The first director (now the principal of the university) was also deputy-principal, an appointment which greatly enhanced the status of extra-mural studies.

In considering the development of extra-mural work, what is practicable will clearly be limited by questions of costs; and in carrying out investigations

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1. *Leadership Training for Community Education*, p. 15 (Manila, Republic of the Philippines Bureau of Public Schools, Division of Adult Education, 1957).
2. *Revised Code of the University of the Philippines*, Art. 121, p. 32.
3. *The Image of the University of the Philippines Today—A Study by the Self-Study Committee*, p. 82-3 (Quezon City, University of the Philippines, 1962). The study does not include data on the efficiency of the system.

to establish programmes, it will largely be a matter of determining what means under given limitations will yield the best results.

Two general and basic questions need to be resolved in determining budgetary policies and limitations on the extramural programme. First, if university-level adult education is to be given a high priority—and there are good social and economic reasons for this—then the government must make adequate financial provision, and the best way of utilizing this is to place block grants at the disposal of institutions of higher education together with substantial free time on government radio and television stations. Second, in counting the cost, it is essentially relevant to consider extramural studies as a means not only of adult education narrowly defined, but also for part-time study toward full university degrees and diplomas, since this can reduce pressure on the expansion of full-time study facilities. Thus, despite the fact that it is very much a second choice, extension-correspondence study in the U.S.S.R. accounts for around 50 per cent of the total enrolment in higher education, and the expansion this has achieved would not have been possible without such study facilities.

The Russians have for long maintained, and are now increasingly putting into practice, the theory that education at all levels is most effective when it is associated with productive work so that 'work, education and theory are being combined with practice, while meeting the country's economic requirements at the same time',[1] and they add to this the view that 'persons who hold jobs are more mature, responsible and experienced and they can reconcile theoretical learning with work experience'.[2] It is interesting to note that the first proposition is nearly universally maintained with regard to technical training for industry, and that in the United States it has in general been found that a significant proportion of students with high academic achievements come from among those who work their way through college —though possibly they have strong economic motivations to study, as well as the strength of character and physique to combine work and study.

In reviewing the value and relationship of the different channels of extramural work, it is first of all clear that, without branch centres, the scope of extramural courses must, even with the provision of all other facilities, be severely restricted—at least excluding all natural science subjects and some social sciences which require laboratory work—unless arrangements can be made for the use of school or government laboratories where such can be found. Even for other subject fields, the absence of an adequate library and facilities for occasional consultation with tutors makes proper study a near impossibility; and in countries of the region, outside the university towns, these facilities can be provided only through extension centres, though the book-box and the bookmobile are possible answers to the problem of texts.[1]

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[1] Nicholas De Witt, *Education and Professional Employment in the U.S.S.R.*, p. 237 (Washington, Government Printing Office, 1961). Prepared for the National Science Foundation.

[2] Ibid.

However, unless these centres assume full teaching functions—and the cost and staffing required for this would be beyond all currently available means, except perhaps for a few small, isolated ventures, which might form the basis for setting up new university institutions[2]—correspondence and radio must be utilized to the fullest extent to support extramural studies. A warning against the possible costliness of correspondence teaching has already been sounded in the section on teacher training, but if this concentrates on the provision of general instructional materials, advice and comment, avoiding detailed individual attention requiring a great deal of staff time, then with careful planning, co-ordination and a large enough scale of operations, the cost per student may be kept down. Furthermore, radio, which is the cheapest but yet in the region a little-exploited means of promoting out-of-school education, can, while making its own contribution, also help to reduce the need for correspondence if the two programmes are properly co-ordinated. This among other things means that broadcast lectures and discussions should not only be integrated with courses, but that at least some of them should show familiarity with the progress of those taking the courses and perhaps also include occasional tutorial comment on interesting and problematic features of the written work of students. The method has been explored in detail by the 'University of the Air' in the Republic of Colombia, in Chile and Jamaica, in the 'Farm Forum' of the Canadian Broadcasting Commission, and its counterpart service in India.

The development of closed-circuit television and the preparation of video tapes offers another widening field. It seems reasonable to suppose that technical developments will both reduce the present high costs and increase efficiency. However, it may be well to keep abreast of developments in more affluent countries before plunging into this still costly technique.

COMMUNITY DEVELOPMENT

That the universities and other institutions of higher education should contribute to community development in direct as well as indirect ways is recognized in principle throughout the region, but action to put this principle into practice, while varying in scope, has mostly been limited and, with the exception of some agricultural extension work, has been of an *ad hoc* and occasional nature rather than planned and continuous. Indonesia and the University of the Philippines have gone furthest with the promotion of work in this field.

In Indonesia, the seventh directive of the 'Seven Basic Efforts' (Sapta Usaha Tama) programme, announced by the Minister of Education, Instruction and Culture in 1959, concerning the formation of 'work groups' in senior high schools and universities,[1] is being implemented by encouraging all universities to undertake social service work on a planned basis, and placing this alongside the education, instruction and research functions of the university. Apart from certain special programmes organized directly by university faculties, there are two main channels for setting up such projects.

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[1] And if a mobile library—why not a mobile laboratory?

[2] Including perhaps some so-called people's universities on the pattern of those in Denmark, Germany and Sweden.

1. Consultation between the president of a university and the Pantja Tunggal (an executive body for each province), consisting of the governor, public prosecutor, chief of police, chief of the army unit, and a representative from the National Front (which groups all political parties and other associations and groups).
2. Through the MIPI Institute of Economic and Social Research (LEKNAS) which centrally organizes social service programmes with the participation of certain universities, notably: the University of Indonesia; the Institute of Agriculture, Bogor; the Institute of Technology, Bandung; the University of Gadjah Mada, Jogjakarta—and in co-operation with relevant ministries.

At the University of the Philippines, expenditure on 'extension and community services and others' formed no less than 23.21 per cent of the total expenditure of the university in 1963 and is planned to rise to 25 per cent during the following five years.[2] *The President's Report* goes on to point out that a new concept in community service was introduced in 1963 when undergraduate medical and nursing students successfully rendered free rural services during vacations, while 'the College of Agriculture carried on its usual extension work through the Department of Agricultural Information and Communications and the Farm and Home Development Office. Through field trips, demonstrations, and meetings the agricultural trainees reached the farmers of Laguna and Bantangas; through radio programs and the printed media the college reached many thousands more. . . . In addition, the university faculty rendered the usual assistance to various government offices in the form of resource persons, consultation, and technical advice'.[3]

Elsewhere, apart from student work camps for road construction, school building, well digging, sanitation, etc., community development work by the university is generally limited to what is done by the faculties or colleges of agriculture, forestry, fisheries, and veterinary science. These carry out research and experimentation, mostly on their farms, into various problems of increasing productivity and make their findings and advice available to relevant government departments and agencies. But the scope of their field work remains small and is mainly designed in the form of short training trips for students—to which, however, Indonesia again presents an exception, in that fourth-year students of agriculture must spend at least four months in the field, in addition to two fortnightly field trips to rural areas in their second and third year. Thus, with few exceptions, the students' acquaintance with and knowledge of rural problems leave much to be desired, and their first preference is usually for government administrative positions.[1]

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[1] *Reform Measures Aimed at the Development of a National Educational System in Indonesia*, p. 20 (Djakarta, Ministry of Education, 1962).

[2] University of the Philippines, *The President's Report* (Quezon City, 1963).

[3] Ibid., p. 30.

The following are typical examples of student work camps:[2]

1. In 1961, the third annual conference of the PKPPTM student organization of Malaya decided to 'mobilize student potentials and to acquaint themselves with the hopes and aspirations of the common man'. Under its auspices, in August 1962, forty-five students from three higher educational institutions devoted one week to reconstructing a two-mile hill path from one side to another of a leper island off Penang.
2. The Philippines' National Union of Students organized its first work camp in 1963. From several Manila colleges and universities, twenty-five volunteer students took part in a ten-day multi-purpose work camp at a *barrio* situated near Manila. The group included students of agriculture, food technology and nutrition, medicine, and education. Their stated aims were 'to study and experience the life of the *barrio,* to communicate with them [the villagers] the knowledge and training they respectively received in their courses of study, and to work in manual labour with them in a commonly agreed project'. The work centred round advice and discussion on animal husbandry, agriculture and sanitation: planting a vegetable and fruit garden for the *barrio* school, and laying out a basket-ball court for the *barrio* youth.
3. In Viet-Nam under the auspices of the National Union of Students, a group of medical students from Saigon in 1959 undertook to visit a series of villages in provinces extending up to the Cambodian border, giving advice on health and sanitation and dispensing medicines.

Such examples of student work camps can be multiplied many times over, but their scale of action remains small and is rarely integrated with other extension work by universities. There is no continuity in this type of effort, and it is likely to prove more beneficial to the student than the community suffering his well-meant but often clumsy attentions. The total effort in the field, apart from the impact of agricultural research, is therefore more a token of a spirit of service and the establishment of contact with the people than a planned mobilization of university resources to render decisive assistance in the development of rural life. The question, as in adult education, is again of the form in which universities can render a unique service without detriment to their other essential functions.

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[1] The University of Malaya, through its Faculty of Agriculture, may also be considered an exception in so far as 40 weeks of practical field work (not necessarily consecutive) approved by the professor are a necessary requirement for the award of a degree.

[2] *Economic Development and Community Development,* p. 362-3 (Kuala Lumpur, February 1964). A collection or articles compiled by COSEC for the Third Asian Regional Co-operation Seminar, an event of the International Student Conference.

One form of university participation, stressing the training of community development leaders, is outlined by a United Nations group of specialists:[1]

'The university in its position as a seat of learning in the society can contribute significantly to the knowledge and practice of community development. A great need which the university can meet is the present lack of facilities for training those who are and will be involved at higher levels in the policy making, planning and administration of community development and related fields. This may well be met by the organization of an interdisciplinary course of training at the graduate level. In the process the social science programme of the university may also have to be expanded. The University of the Philippines has set up such a course in the College of Agriculture....

'It is also necessary that the university should attempt to orient its professional and technical faculties to the philosophy and principles of community development, particularly those which are most closely related to it. Graduates of these faculties will ultimately be occupying positions of authority and leadership in the community. Their understanding and appreciation of community development will greatly help in promoting it as an important instrument of economic and social progress. This may well be done by affording facilities for the students of these faculties to take courses in community development.

'The traditional academic orientation of the university in many countries may often prevent it from being involved closely in the urgent practical problems of government. Certain countries have attempted to meet this by setting up autonomous institutes affiliated with the university but related to government. The Centre for Community Studies in Saskatchewan, Canada, is an example. Similar attempts have been made in India and Pakistan, and Nigeria has set up an Institute of Applied Knowledge.

'These institutes emphasize multidisciplinary approaches to research into practical problems arising in the community and make available the knowledge so gained to the Government and others engaged in action programmes.'

Here, the examples given suggest the introduction of special courses added to the regular curriculum. But there is also the possibility of re-orienting the curricula for various subjects in such a way that some form of extension work becomes an integral part of them. How this might be done without lengthening the period of the course or reducing available time for essential specialized studies needs careful thought, but the principles involved would not be basically different from those governing the provision of field and practical work in the curricula of such subjects as agriculture, engineering, and social welfare. Thus students of medicine and nursing could be required for the completion of their public health course to spend some time working in rural areas and devote part of their internship to assignments at rural clinics;

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[1] *Report of the Ad Hoc Group of Experts on Community Development* (United Nations, New York, 1963. E/CN.5/379).

under the direction of their teachers, students in the social sciences might be required to form teams to carry out socio-economic surveys and studies in rural communities; students of civil and construction engineering might usefully be assigned apprenticeship work in rural areas; those studying industrial technology would by no means waste their time in gaining a first-hand acquaintance with the development problems of rural industries and demonstrating the use of relevant new tools and techniques; each of the humanities students would complete a more rounded education by spending some time in working and living with village communities and do so not least by studying folk culture and art.

In the field of agricultural extension, the ICA Survey Team, under the chairmanship of Dr. John A. Hannah, president of Michigan State University, reporting its findings on the University of the Philippines, recommended the following basic reorganization: '. . . that the responsibility for work in agricultural extension be transferred at the earliest possible time from the Department of Agriculture and Natural Resources to the University of the Philippines. . . . The university should be better able to remedy the glaring defects in the training of extension workers. . . . And the possibility of inculcating a positive attitude toward service to people should be easier for a public university operating as it should.

'It is not proposed, however, that extension agents be appointed exclusively by the university, but rather in co-operation with other governmental units. It is recommended that the proper authority in municipalities, provinces, and chartered cities appoint extension agents from a list of individuals certified by the university as being technically qualified for the position in question.

'These recommendations also have implications for the university's instructional program in agriculture. Certainly, an intensification of the pre-service and in-service program in education for agricultural extension, both at the undergraduate and graduate levels, will be necessary not only at Los Baños but throughout the university system. . . . From time to time, the more competent field agents will need to be returned to the campus as instructors in order to make certain that field-gained insights are infused into the academic program.

'Many nations of the world have agricultural extension services. But nowhere in the world has agriculture made as much progress in recent years as in the United States. This progress is in no small part due to the joining together in the agricultural colleges in every state of the programs of instruction, research, and extension in agriculture. This combination has ensured that the teaching programs are kept realistic; it has kept the research programs devoted primarily to the solution of problems of practical concern, and it has provided a technique for relaying the results of research to all interested farmers.'[1]

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[1] *A Study of the University of the Philippines*, p. 34-5 (Quezon City, University of the Philippines, 1958).

A wider range of student participation in the economic and social development both of the countryside and of the growing conurbation should surely be encouraged as part of extra- or co-curricular activities. The latter could be developed either as a form of training in service during part of the long vacation or, more seriously, in the form of a requirement that all students should at some appropriate stage of their studies devote perhaps a year to training and work in the field of community development and social welfare. A similar practice, it may be recalled, has been far from unknown in the field of compulsory military service.[1]

Professor N. K. Sidhanta, commenting on these alternatives while he was vice-chancellor of the University of Calcutta, drew the following picture:[2] 'These "social service cadets" or "village apprentices" do some good to the villagers, bringing their academic knowledge and culture to rural areas unaffected so far by these currents. They can illustrate some of their theoretical knowledge of social service with actual field-work; and this has an educative value for the students themselves. Assessing the net value of these camps one sometimes wonders as to which party derives the greater benefit from them—the villagers who come in touch with those who have imbibed culture at the universities or the students having their first experience of traditional folk-culture and traditional ways of life. Our political leaders struck by the good which has accrued from the programmes put in practice are keen on extending their sphere—even to the extent of making them compulsory for all college students for the period of a year. One argument in favour of this step is that the students would then leave the university a year older and considerably more mature in the ways of the world. In a country where industrialization has not kept pace with the spread of higher education and where, therefore, there is a considerable amount of educated unemployment or under-employment, products of universities should not look forward only to white-collared jobs. Manual work and village life for a year may widen their avenues of employment even if it may not put their university education to the best use.'

Doubt as to how far universities could or should go in orienting their study and research programmes to community development needs in these similar ways may be expressed on various counts. Thus it may be held that even if community development and extension work offers good educational training for students, they are not in a position to contribute significantly to meeting nation-wide needs and problems; that, in so far as practical results are achieved, the cost of using students is still far too high; that it is only for those students preparing for community development or extension work that experience in these fields should be provided, whereas for others all the time that can be saved from appropriate specialization is better devoted to 'general education'; that the university's function is limited to research and teaching, and action in practical fields is quite outside its and its community's competence.

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[1] In Iran a system recently introduced permits young graduates to opt for teaching service rather than for compulsory military service—'members of this Literacy Corps, as it is known, are sent out to villages which are neither the most remote, where supervision would be impossible, nor the most accessible, where schools exist already, but to thousands of middling villages, to wage war against ignorance and illiteracy and to raise the level of social and economic life.'—*The Times Educational Supplement* (London), 12 March 1965, p. 744.

[2] N. K. Sidhanta, 'Cultural function of the university', *The University Today: its Role and Place in Society*, p. 122 (Geneva, World University Service, 1960).

All of these and similar contentions of course merit serious study under given conditions. If it is accepted that universities should seek to make an important contribution to community development, then what is clearly needed is to conduct a series of evaluations, both (a) of the results on the personality of students, on their ultimate academic attainment, on their choice of profession and its location, and (b) of the effect of such a practice on the community where it is carried out.[1] The pilot projects might then show to what extent and at what cost universities could meet the need. In the process it should also be possible to find practical answers to other types of basic questions: additional staff and financial requirements; evaluation of the results achieved in comparison with similar work done by other agencies; the feasibility of interchange of staff between university and community and extension work in special institutes and in the field; the effectiveness of students as extension workers; the influence of various types of field work on the student's proficiency in his chosen subject and on his general attitudes to life and work; difficulties of continuity and co-ordination.

If dispersal and duplication of effort are to be avoided, institutions of higher education must not only ensure co-ordination between the work of their own colleges or departments and studies undertaken in consultation with appropriate government agencies, but also help to set up appropriate machinery to bring about continuing consultation among themselves, government agencies and institutes, and voluntary bodies active in community development. In this way broad plans for both research and extension work could be devised and periodically revised on a nation-wide as well as a regional basis. Adequate allowance would of course have to be made for flexibility; but in general those best fitted for a job would undertake it, and the scope for co-operation would be explored to its fullest extent. This may in some cases also lead to joint support not only for certain extension-research projects but also for setting up multi-purpose rural institutes in various regions of the country. These could provide universities working in a given area with a centre for their adult education and their extension work, and enable them to expand their activities as circumstances require and permit.

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[1] The literature of community development still awaits a study of the exhausted 'over-developed' area or village so often to be found near training centres.

The employment of students in extension work presents special problems of continuity because they form a constantly changing population: newcomers lack experience; those who have gained it soon leave; all are generally available only for short-term projects. Where work with a community or group of communities must, as is usually the case, be carried out over an extended period of time, adequate organization could ensure a sufficiently continuous supply of student workers. Furthermore, co-operation with government and voluntary agencies and, where relevant, extension centres of the university should bridge such gaps in programme implementation and follow-up as cannot be filled directly from the university community's resources. The importance of such a constant effort cannot be over-emphasized, for without it and the encouragement, support and advice which it brings, new ideas, methods and rhythms of work which have begun to be accepted soon fall prey to the remaining forces of inertia and conservatism, and the old order of things is seen not to have changed after all. The problem of experience might, apart from the little that can be done with short training courses, be tackled by appropriate collaboration between higher and secondary education. Together they could work out the provision of basic pre-university courses in community development problems and of apprenticeship in rural development work. Here it may be recalled that, apart from the Soviet Union's university entrance requirement of one year's practical work, several countries in Europe also require candidates for certain agricultural and technical courses to have experienced a minimum period of work in agriculture or industry, as the case may be. The process should not be a one-way traffic—and the leaders of the community and community groups should be welcomed at the university, where they may well have something to teach as well as much to learn. It should not be impossible to organize a project whereby a complex of educational institutions based upon a university adopts a particular area of the countryside, with all sections—rural communities, local services, central services and agencies—combining in an over-all planning exercise before a long-term development programme is put into operation.

Finally, the university clearly has a major part to play in the over-all planning of community development programmes, where its full resources are required if anything more than a pragmatic approach, which has in so many areas started with high hopes but has never maintained its initial impetus, is to be replaced by a sustained and planned attack.

Research is needed into custom and tradition, into attitudes and motivations, into the effect of a developing technology on the farmer and his family, into the effectiveness of the use of mass media on individual and public opinion, into the best teaching techniques with adult groups, into the material and financial aspects of development and its organization.

Such a basis for rural development is beyond the capacity or the competence of government departments, or the powers of a single *ad hoc* institution, and the skills needed spread far beyond those of the economist or the whole field of social science. It calls for the deployment of the skills and knowledge, the breadth of experience and wisdom, the power to teach the patience to experiment and the judgement to evaluate, which, if they are to be found at all, are surely among the most valuable assets of a national university.

CULTURAL DEVELOPMENT

The implications of cultural problems and aspirations have naturally been dealt with in previous chapters, as they form part of the total social situation and cannot be left entirely to a separate consideration. Nevertheless, there is a sense in which cultural development should receive specific attention. Culture is still, despite Unesco's ten-year Major Project on the Mutual Appreciation of Eastern and Western Cultural Values, a word with which many, and particularly some of the most cultured, feel acutely uncomfortable.

All countries in the region are concerned to develop a national identity which, through the promotion of a common national language and a unity of purpose in social action, involves as part of this process a flowering of literature and other creative arts and the adaptation of traditional aesthetic and moral values to economic demands in such a way that they retain their essential spirit and yet interact constructively with the needs and impacts of technological and social change.

Apart from the direct impact of the language policy on higher education, there are other ways in which these objectives may be framed in terms of socio-political policies that inevitably influence the role of the university. For instance, in both Burma and Indonesia the State has formulated what it considers to be a basic cultural background for all educated citizens, and the universities are expected to inculcate this in their students. In other countries, as in Malaysia and the Philippines, the specific form in which general cultural objectives might be realized are largely left to develop freely, and together with other social organizations, universities have greater flexibility in determining and playing their role.

But whichever of these politically determined approaches are adopted and despite the different influences they exert, certain general questions on the cultural role of universities remain to be considered on their own merit. How far and in what ways should universities, apart from the specialized interests of their various disciplines, attempt to disseminate cultural values? In what sense can the university be a creative centre of culture as well as of knowledge and research, helping to integrate traditional cultural values with the new demands of social and technological progress? In what ways can it contribute to the formation of a national identity and the solution of the language problem?

Dire warning on the effects of neglecting the cultural components of university education which are no less relevant today than when they were sounded more than two decades ago is given by Ortega y Gassett:

'Compared with the medieval university, the contemporary university has developed the mere seed of professional instruction into an enormous activity; it has added the function of research; and it has abandoned almost entirely the teaching or transmission of culture.

'It is evident that the change has been pernicious. Europe today is taking its sinister consequences. . . . The average person is the new barbarian, a laggard behind the contemporary civilization, archaic and primitive in contrast with his problems, which are grimly, relentlessly modern. This new barbarian is above all the professional man, more learned than ever before, but at the same time more uncultured. The man who does not possess the concept of physics (not the science of physics proper, but the vital idea of the world which it has created), and the concept afforded by history and by biology, and the scheme of speculative philosophy, is not an educated man. Unless he should happen to be endowed with exceptional qualities, it is extremely unlikely that such a man will be, in the fullest sense, a good doctor, a good judge, or good technical expert. But it is certain that all the other things he does in life, including parts of his profession itself which transcend its proper academic boundaries, will turn out unfortunately. His political ideas and actions will be inept; his affairs of the heart, beginning with the type of woman he will prefer, will be crude and ridiculous; he will bring to his family life an atmosphere of unreality and cramped narrowness, which will warp the upbringing of his children.'[1]

It may be that the case is somewhat dramatically overstated, but it serves to emphasize the growing concern for the general education of the university students which since the Second World War has been felt nearly everywhere. In the South-East Asian region, universities in Indonesia, Thailand, and the Philippines have introduced general courses—both to remedy inadequacies in the liberal education provided by secondary schools and to provide a broad cultural background. But the way in which this is done means that time available for specialized learning is reduced. It is also as yet not clear how far such courses, apart from their remedial functions, may not be simply informative without enabling the student to integrate his knowledge, to obtain a perspective of his specialized studies in a wider cultural context, and to play an active part in the total cultural process.[2]

A somewhat different emphasis and approach is suggested by Professor Frank Pinner considering the relation between liberal education and

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1. Ortega y Gasset, *Mission of the University*, p. 44-7 (London, Routledge and Kegan Paul, 1946).
2. A full discussion of the approach to this problem in the new universities of the United Kingdom through the shape and content of university courses may be found in the report of the Gulbenkian Educational Discussion, 1964, recorded in the *Universities Quarterly*, Vol. 19, No. 2, March 1965.

specialization: 'If we assume that liberal education consists in the study of some limited set of scriptures, then a high degree of specialization can easily cut into the time needed for scriptural scholarship. If we believe that liberal education consists in a liberal sprinkling of everything, specialization will, again, reduce the range of knowledge to which an individual can be exposed. If, however, we are willing to say that liberal education consists in the development of aesthetic sensitivity, then the breadth of exposure certainly is not as important as are the intellectual habits of the student.

'I can see no reason why a higher specialized person must be an intellectual dunce; . . . our most determined efforts must be directed toward the stimulation and development of aesthetic sensitivity in *all* fields, irrespective of discipline, humanistic or scientific, professional or academic, "basic" or "applied".

'Our students must be prepared not only for the technical and economic pursuits that lie before them. They must also learn to enjoy themselves in a creative, satisfying manner.

'We shall be unable to achieve some stability in our world without producing young people who have a keen sense of beauty.'[1]

If the two approaches are contrasted further, it is obvious that while the first requires the establishment of special courses and a number of teachers with sufficiently broad qualifications and interests to teach them, the second demands that in each discipline there should at least be a hard core of teachers who have the ability to stimulate aesthetic sensitivity, and to develop in the student a consciousness of the discipline's interconnexions with other streams of knowledge and its philosophical, historical, and cultural contexts and implications. Indeed, it requires as Professor Goldberg, quoting Cardinal Newman, suggests, that 'subjects are presented, not by specialists working in the provinciality of isolation, but rather by scholars who exercise a wholesome balancing contrapuntal, corrective, complementary effect upon one another; and hence upon their own intellectual production, as well as upon the impact they make on their students'.[2] This is a goal whose achievement demands a wealth and quality of teaching resources which South-East Asian countries can hardly secure in the foreseeable future. Meanwhile, efforts and experiments might be concentrated on developing curricula for general education and building up interdepartmental co-operation.

There is also the view that a sound basis to a general education should be laid in school, a topic arousing considerable controversy in the United Kingdom, where there are concurrently demands for a more broadly based secondary education on the one hand, and for more intensive specialization (by university faculties) on the other. Lionel Elvin, recognizing different needs

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1. Frank Pinner, 'The crisis of the State universities: analysis and remedies', in *The American College*, p. 967-9, ed. Nevitt Sanford (New York, Wiley, 1962).
2. Maxwell H. Goldberg, 'Quest for a unity of knowledge', *The University Today, . . .* op. cit., p. 276.

of different national situations, still suggests that: 'No person should be accepted for professional training at a university who has not had a good general education. This may be given adequately at school if the school course is long enough and the school standard high enough. . . . When study for a first degree is very specialized, as it is in the United Kingdom, if general liberal education is to continue, this must be in an extra-curricular and informal way; and in this situation, it is very important that the general atmosphere of a university community should encourage the specialist student to develop his general civilized interests.'[1] But in South-East Asia where, with some exceptions, particularly in Viet-Nam and Malaysia, secondary-school standards are comparatively low, universities will, at least for some time to come, also have to perform remedial functions in general education.

This question leads to the role of the university in promoting creative pursuits in the fine arts, music and literature—in all exercises of the human spirit which transcend material concepts.

With the exception of a number of universities in the Philippines, and the interesting example of a very active Fine Arts Department of the Technical Institute of Bandung,[2] training and work in the fine arts usually goes on outside universities, many of which, however, in one context or another, provide some courses in the history and appreciation of art.

It may be argued that artists, writers and musicians, as distinct from those who might be teaching in the relevant field, need to be free to experience life unhampered by academic restriction and that their talent would wilt in the comparative seclusion of the university and its formal organization and procedure. The fear is scarcely justified by the concept of the 'resident' poet, philosopher or musician, or indeed of the standards of the great musical academies where the teachers are themselves artists of the greatest distinction. And even Mr. Elvin, who voices his distrust of academies and feels that to establish 'official bodies as guardians of taste is more likely to enthrone the conventional and dull than to liberate vitality', emphasizes the importance of developing informal means of enriching the cultural life of university communities in terms of the wide interests and cultured activities of all its members, rather than of specialized artistic studies and training. With literature as an example, he suggests: 'By all means insist, whatever the formal subject being studied, on writing that is good communication in terms of its specific purpose. But "creative" writing? The creative gift is hardly to be commanded by the mere establishment of a curriculum. Writers do not come that way. If the course were poorly handled it would be more likely to kill any genuinely creative gift in the young than to nourish it. And who is competent to

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1. Lionel Elvin, 'Professional training and general education', *The University Today*, . . . op. cit., p. 48.
2. The Fine Arts University (Silpakorn) in Bangkok is an exception only in name, since it is really a specialized academy.

give such courses?[1] Surely none but creative writers themselves? One suspects that they will prefer to be writing. And one fears that the university teachers who do presume to teach these courses, however conscientious and percipient they may be, will not be long remembered for their own creative writing. Much better do this informally, for instance just by having a poet around as an honoured guest and friend, as Amherst invited Robert Frost to "be around" for so long, or as King's College, Cambridge, delighted young and old alike by making E. M. Forster a fellow of the college. But such writers will not "teach" the young to be creative writers. They will do something else by being there—give the young a sense of what the life of the imagination is, and a sense of what critical standards are in practice, as apart from what formal books on these subjects may say. . . .'

In the ASAIHL Seminar on University Organization and Administration, Dr. A. C. Joshi, vice-chancellor of Panjab University, approached the question from a somewhat different angle:[2] 'The present emphasis on the teaching of sciences and technology, accompanied as it is by most of the bright students taking up courses in these faculties, is generating a marked imbalance in the life of the universities and taking them away from the education of the whole man, which, for a long time, has been a deeply cherished university ideal. The restoration of balance, without adversely affecting the needs of the State for highly skilled scientific and technical manpower, is a complex task requiring a detailed study of every institution. In general, however, it can be stated that to some extent this imbalance can be removed by the study and cultivation of fine arts. The universities so far have largely concerned themselves with the history and appreciation of literature and art. The creation of art has been mostly outside the universities. As a result the fine arts have not been able to make much progress in the universities and appear quite academic before the achievements of science. If the universities could also interest themselves in the creation of arts as they have done in the creation of sciences, then the arts would grow to a sizable proportion in the university campuses and, by their impact on the products of the universities, give a correct balance to higher education. . . .'

As Dr. Joshi stresses, the question requires specific study, but a decision on how far universities should develop their functions as centres of cultural activity is of crucial importance to South-East Asian countries where cultural values are in a state of flux, new art and musical forms are emerging with strong but perhaps not the most happy of Western influences, and even the wide use of the national language is mostly in its initial stage. In these circumstances, there is a serious mutual loss if universities and academies or schools of art and music lead separate lives, and cannot find ways of establishing close practical associations which go beyond the occasional visiting lecturer.

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[1] Professor Baker, teaching drama at Harvard?

[2] ASAIHL, Seminar on University Organization and Administration, 20-24 January 1964, *University of Hong Kong. Report*, p. 125-6 (Bangkok, Association of South-east Asian Institutions of Higher Learning, 1946).

Even so there remains the question of how far the university can or should devote a significant part of its research to the resolution of cultural problems. It needs to be considered in the context of a situation where there are non-university institutes and government agencies concerned with investigations of both traditional culture and present-day trends and problems of various cultural aspects of the life of the nation and its diverse communities. Thus, for instance, there is in Burma the International Institute of Advanced Buddhist Studies, and the Union Ministry of Culture has a department for Ancient Literature and Culture and a Music and Musical Research Section; in Indonesia there is an Institute for Indonesian Culture, which includes a museum; Thailand has a Royal Institute of Arts and Sciences, which among other things acts as an academy to supervise the development of the national language; Viet-Nam has a Directorate of Cultural Affairs responsible to the Ministry of Education and an Association for Asian and Cultural Studies.

There may be said to be three main fields for cultural research: (a) historical, which apart from pure scholarship may bring about a better understanding and revitalization of traditional cultural values, but is not concerned with questions of the interplay of these with current socio-economic forces; (b) contemporaneous, which is concentrated on present cultural phenomena and tensions, including the interplay of different Western and Eastern influences; and (c) educational, in the sense of evaluating various aspects of the mutual cultural impacts between university and society and designing and carrying out experiments to see how the university's contribution might be increased and enriched. Historical research into cultural matters at present receives the most attention in universities and tends to be largely academic. The second, in so far as it is undertaken, is, with the exception of modern literature, more descriptive than analytic, and there is little collaboration between the social sciences and the humanities (including the fine arts and music) in dealing with the problems and development of cultural behaviour patterns and creative activity. The third, which is perhaps most important for universities, since only they are properly qualified to undertake it, is, with few exceptions, largely neglected.

The first type of research is carried out by such university institutions as the Buddhist universities of Cambodia and Thailand, the Institute of Asian Studies in the University of the Philippines, the Departments of Indian, Islamic, Malay, and Chinese Studies at the University of Malaya, the Department of Chinese Studies at the University of Saigon and the Institute of Sinology in the University of Hué. This does not mean that none of them is concerned with the contemporary scene, but what is done emerges in isolation and lacks broad social connexions. On the other hand, research in the social science disciplines takes little note of humanistic factors that do not have an evident influence on their fields of interest, so that, for instance, religious tradition or language may receive some attention, but the fine arts, music and even literature, little if any. The Institute for Linguistic and Cultural Research attached to the University of Indonesia, with its department covering lexicography, social anthropology, epigraphy (Bali), dialect study (Lombak), socio-ethnography (Makassar), may structurally present possibilities of becoming an exception to this trend, but it seems that at present its work is carried on in the conventional compartmentalized fashion.

There are thus a host of questions to which universities certainly may, and perhaps should, have to find answers. In what ways do religious and other cultural traditions obstruct modernization in rural areas? How might some of these—including, for example, the general appreciation of leisure, as well as the co-operative spirit of *bayanihan*[1] in the Philippines and *gotong-rojong*[2] in Indonesia and Malaya—be used to support rather than retard change? How far do folk-lore, art and music influence new creative forms directly or indirectly? In what forms are the mass media influencing aesthetic appreciation and moral attitudes? In what ways might the development of fine arts and music help in bringing about a deeper mutual understanding between diverse linguistic, religious, and ethnical groups? What obstacles stand in the way of the development of a modern literature in the five national languages (Burmese, Khmer, Lao, Malay, Pilipino) in which they are at present largely lacking? How is it that more often than not Western cultural influence tends to manifest itself at its lower levels in the dance music of adolescents—undistinguished architecture, crude advertising, sensational journalism and the commercial cinema? What in different cultural fields makes one adaptation of a foreign influence acceptable, perhaps even the beginning of a significant new trend, and another merely an imitation? All these questions must be studied in various specific contexts if there is to be form and significance in cultural development: development, not planned progress, for culture does not take kindly to regimentation.

In the educational field there is an urgent need for universities to devote a proper share of their resources to studying ways in which they might make more of their cultural opportunities. Thus what Professor Stanford has to say of the American college is equally applicable to South-East Asia: 'It should now be plain to all that our colleges are not doing what they might to realize their potential or even to achieve minimal objectives. . . . The colleges will change only when more knowledge of what they do and of what they might do has been produced and made available to educators . . . sooner or later it will be necessary to initiate large-scale experiments in education; experiments in which whole colleges, or whole educational programs within colleges, are set up in accordance with stated hypotheses concerning the conditions and processes of change.'[3]

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1. Expression used to denote a traditional spirit of co-operation among country people.
2. See previous footnote.
3. *The American College*, op. cit., p. 1009-11.

While the blame is put rather heavily on the shoulders of the humanist, it would be difficult to quarrel with the additional plea that Professor Stanford makes for interdisciplinary collaboration in such research. Social science: 'should, indeed, expect to find natural allies in its humanistic critics. Wrong-headed as they often are, their hearts are usually in the right place. If only they would look about them, address themselves to contemporary social phenomena, and permit themselves more systematic thinking. Instead of offering a poetical commentary on practical problems, they ought to help the social scientists to arrange things so that more people can become poets.[1]

On the general question of the total cultural impact of the university, little remains to be said except that these additional responsibilities must be accompanied by an equivalent increase in financial and human resources, and that such extension of activities must not reduce the effectiveness of its essential teaching and research functions.

The heavy cost implications of trying to realize the university's various potentialities in meeting social and cultural needs and aspirations, which clearly go far beyond any immediate economic requirements, must be admitted, and will have to be considered. Whether such aspirations can be ignored in view of future economic development which would later permit indulgence in such activities—whether material progress can continue while cultural values lag far behind, these remain a subject of speculation; but, it may be hoped, increasingly one also of sympathetic investigation.

No country, not even Burma, so primarily concerned about the material welfare of its people, overtly places material before human progress. Nevertheless, when it is a question of financial investment, material needs are placed first. The universities are not provided, and there is no indication that they will be provided in the future, with funds on the scale required to achieve their full potential. It is true that countries within the region, as developing countries everywhere, have only limited funds for unlimited opportunities. It is true, too, that in the circumstances available resources should be invested only after the most painful selective processes. But it is precisely for these reasons that the consequences of neglecting the socio-cultural factors must be fully investigated and given due weight in policy decisions.

The cost of quality—of more and better teachers, equipment and facilities—is undoubtedly high, in education as in everything else. The universities can improve themselves, but can do no more than is permitted by the means with which they are provided.

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[1] ibid., p. 1019.

9. The structure and growth of post-secondary institutions

In reviewing patterns of education in the region it was noted that there is a wide variety of post-secondary institutions within each country as well as in the region as a whole. Here the task is not to attempt a detailed critical appreciation of each of these; but to distinguish main types, and thence proceed to an evaluation of the potentialities for growth of the various forms.

SOME CURRENT INSTITUTIONAL CHARACTERISTICS

All the countries in the region possess State institutions of higher education which, despite varying degrees of autonomy in the case of universities (possessed in a high degree by the universities of Malaya and Singapore), seek basic objectives and standards in accordance with the State's educational policy, are primarily financed by the State, and are subject to at least indirect control in matters of financial policy. With the notable exceptions of State universities in Malaysia and the Philippines, the staff of these public institutions of higher education are civil servants, their minimum qualifications, salaries and other terms of appointment being subject to approval by the appropriate government machinery, either directly through a ministry, or through a board, council or commission. This is also true of State technological colleges or institutes, teacher-training colleges, specialized training institutions organized by government departments (in such fields as agriculture, public health, administration, statistics and social welfare) and research centres of both a general and a specialized departmental nature.

While the organizational nature and forms of State control vary, the Malaysian Minister of Education, Abdul Rahman bin Talib, addressing the 1962 Convocation of the University of Malaya, expressed a generally prevalent opinion on the principle of such control which is not confined to the political sphere and is common to many countries in Western Europe as well as to socialist countries elsewhere. 'In short our university should conform closely to the national education policy . . . no institutions, including the university, can function in a vacuum; all institutions are created to meet a situation, a need or a requirement; and in this respect education including university education is meant to serve the needs of society. I must therefore state here my conviction that a university should be given every freedom to seek the truth, to spread knowledge and to lead the community. But where such knowledge or leadership falls out of step with the needs and aspirations of the society and the people whom the university is supposed to serve then there is need for this freedom to be checked so as to make the university orientate itself in order to assume leadership once again.'

Such checks may in fact be exercised through direct government interventions, as has occurred, for instance, in the case of Burma; indirectly through strong government representation on the councils or governing bodies of universities, as in the case of Malaysia; or through the way in which government grants may be tied to specific types or branches of university development and expansion, which has happened all over the world. Whichever method is used, the degree to which an institution is able to retain its dedication to objectivity—if not also the freedom to choose its own problems—will depend not so much on legislation and administrative relationships as on the way in which these work out and the conventions that are built up. Thus France, for instance, has, in principle, a highly centralized system of government-controlled education, but none of the many professors who publicly opposed government policy in Algeria in the 1950's and early 1960's was penalized. On the other hand, in the United States, with 'autonomy' assured, there was a time when both the label of 'unAmerican activities' and the refusal to take the loyalty oath cost many a professor his teaching position, though in some cases he was able to resume it at another and sometimes more renowned institution.[1]

PRIVATE INSTITUTIONS OF HIGHER EDUCATION

In addition to the State universities, in five of the nine countries there are also private institutions of higher education whose establishment and operation is permitted on the fulfilment of certain basic conditions which are at least intended to safeguard minimum educational standards. These institutions, which are large in number and play an important role in meeting the expanding demand for admission to higher education in Indonesia and the

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[1] On this topic of government intervention, with particular reference to Nigeria and Ghana, see also Sir Eric Ashby, *African Universities and Western Tradition, The Godkin Lectures at Harvard University, 1964*, p. 43-93 (London, Oxford University Press, 1964). The question of autonomy is not discussed further here since it is the subject of a special IAU study; cf. p. 20.

Philippines, fall into distinct types according to the nature of their administrative structure and their relations with government, as well as, of course, in terms of the kind and scope of their academic provision and training facilities. They may, first of all, be denominational, as the Catholic University of Dalat in Viet-Nam, the Protestant Silliman University in the Philippines and several Islamic universities in Indonesia, or secular as most of the private institutions of higher education in Indonesia and the Philippines. There is also the special case of the Chinese-language institutions of higher education (Nanyang University and Ngee Ann Liberal Arts College in Singapore). The second distinction is whether or not the private institution receives financial and other forms of government support. This is at present available only to the registered private institutions (including of course the 'equalized' and 'recognized' universities) in Indonesia and recently Nanyang University, which is now approaching a phase of direct government control, necessitating an inquiry into its standards and the provision of financial support conditional on the introduction of various improvements. The third classification, which, with the possible exception of some unregistered private institutions in Indonesia, applies only to the Philippines, is the profit- or non-profit-making character of the institution.

In the Philippines, in Viet-Nam, and in the case of a few 'equalized' institutions in Indonesia, examinations and awards granted by private institutions are recognized by the government. But in the Philippines the practical evaluation of a qualification varies considerably with the reputation of the institution, and for general professional practice as well as government service, graduates must in addition pass professional or government examinations. In Indonesia, there is also a category of 'recognized' private institution which may conduct examinations under government supervision; students of registered institutions must qualify from a State university.

In their scope, private institutions vary from the wide range of courses provided by a number of basic faculties in Dalat, Nanyang, and the major private universities in the Philippines to a very limited coverage, in Indonesia concentrated on social sciences and the humanities, especially law and economics, and in the smaller Philippine institutions on vocational or professional fields, particularly law and commerce. Enrolments range from less than 600 (for example 584 at Dalat, Viet-Nam in 1961/62) to well over 25,000 at the Santo Tomas University, the University of the East, and the Far Eastern University, all in the Philippines. Similarly, while the private institutions play a marginal role in Malaysia and Viet-Nam, in the Philippines and Indonesia private institutions account respectively for over 85 and 20 per cent of the total enrolment in higher education.

These figures make it clear that much of the consumer demand for the expansion of higher education facilities can, at least in certain situations, be met through private initiative. It requires no financial support from the State in the Philippines and comparatively little in Indonesia, where State aid ranges from 10 to 40 per cent of the budgets of individual institutions. There are, on the other hand, serious difficulties in respect of standards as well as planning that need to be resolved where a policy of permitting or encouraging a large sector of private higher education is to be considered. However, in the following comment, while adding a cautionary note on the control of standards, Professor Hla Myint[1] may be found recommending that the Philippines' practice of permitting the establishment of a large number of private universities on a commercial basis should be seriously explored: 'Under this system, there would be a division of labour between the State universities, which would restrict their teaching mainly to the "honours" and post-graduate type of student, while retaining examining powers over the private universities, which would cater for the bulk of the pass degree students. The commercially-run universities, having their standards controlled either by the State universities or by professional bodies for various technical and vocational courses, could effectively ease the situation.

'The idea of commercially-run universities is disconcerting to many orthodox people, who nevertheless accept commercially-run private schools, but so long as there is pent-up demand for university education, there is no reason why it should not be supplied. Further, commercially-run universities, catering for students in mass at middle or lower levels of training, would not compete for the same type of teaching resources as the State universities, which require a hard core of highly qualified full-time teachers.'

The two requirements of administrative control of standards and of maintaining upper and lower quality ranges dividing State from private institutions require careful consideration, as does the charge of developing education *au rabais*, a familiar cry in Africa. Indeed, in the Philippines attempts have been made to control standards through legislative measures that ignore the quality distinction: in practice, though there are a few exceptions, while the letter of the law may be observed, its spirit is more honoured in the breach, and Philippine educators generally bemoan the prevalence of low standards. In Indonesia, the fact that government support is conditional on meeting specified requirements sustains standards to some extent, and State control of final examinations guards the standing of recognized qualifications. Nevertheless the wastage which is already high in the State universities is estimated to be considerably greater in the private institutions, whose staffing, equipment and other facilities are generally admitted to be inferior. The University of Dalat and various denominational universities in Indonesia and the Philippines are assisted in maintaining their standards through the support of religious bodies, which supply both staff and finance. Additional funds, as with some other institutions of high repute in the Philippines, are also derived from comparatively high fees which a sufficient number of students is able to pay.

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[1] Hla Myint (former rector of the University of Rangoon), 'The universities of South-east Asia and economic development', *Pacific Affairs*, Vol. XXXV, No. 2, 1962, p. 125 (Vancouver, University of British Columbia).

While no private institutions of higher education can be set up and operated in the Philippines without the approval of the Department of Education's Bureau of Private Schools, there are no definite regulations governing such approval for four- and two-year colleges. To be entitled to call themselves universities, however, private institutions are supposed to fulfil certain basic conditions.[1] However, it appears that the problem of improving quality is made more difficult by the government exercising strict control on curricula (including the disputed twenty-four compulsory units of Spanish-language courses) and prescribing material requirements for buildings, but specifying no particular standards. Apparently neither the private institutions nor the Bureau of Private Schools favour instituting general examinations, which might ensure better quality in all subject fields.

The experience of large numbers of private institutions of higher education in Japan and the United States, ranging from those maintaining the highest standards to others which have been described as 'degree mills', also makes it clear that control of qualifications awarded and the standards they represent is no easy matter. Indeed the best-administered system of private education will fail if the profit-making colleges are not, in one way or another, demonstrably acquiring higher profits through the attainment of higher standards, or if, in non-profit-making institutions, the costs of operation and development are too heavily dependent on the income from student fees, when their viability obviously would depend on keeping per student cost below the per student income from fees; this, except for a few exclusive institutions for the high-income group, must inevitably mean a losing race against the high demands of quality, not only in the scientific and technological fields, but even more in others where it is easier to crowd classes with additional enrolments to make a substantial reduction in per student costs. In the first instance, as with other commercial enterprises of benefit to national development, careful consideration needs to be given to the provision of special advantages for high-quality institutions—including, where relevant, tax exemptions, special facilities for the import of educational materials, government loans and other support—and to encouraging investment in them by industry and commerce. The practical complications of devising workable measures of this type are of course numerous: but once the principle is recognized and accepted, there is no reason why it should not be possible to establish effective incentives, particularly when it is appreciated that the profit motive no more necessarily vitiates the efficiency of the entrepreneur in education than in other more obviously commercial enterprises. Support by grant-in-aid naturally involves greater financial demands on the government, but even so remains less than the cost of fully financing a comparable State institution—grants, generally speaking, are likely to amount to less than 50 per cent of the institution's annual budget: a State institution needs at least 80 per cent of its total expenditure to be met from public funds.

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[1] See above, p. 181.

However, one danger of such a system may be found in concentrated form in Hla Myint's suggestion that the private universities might 'cater for the bulk of the pass-degree students' as distinct from the 'honours' and post-graduate type of student.

It is one thing to establish legislation and executive measures which would prevent private institutions from awarding higher qualifications or pretending to research status if they do not fulfil certain academic conditions. It is quite another to set up restrictions which would keep them bound to 'pass-degree' teaching or less, and thus relegate them inescapably to second-class citizenship in the world of higher learning. If they are not given the fullest opportunity to develop into first-rate institutions of higher learning they will tend to become not second but third-rate even in their circumscribed field of competence. Though not in fact related to this issue, the following summarized opinion of the Robbins Committee lends weight to this view and also provides a basic context for not establishing a rigid hierarchy of higher education.

'We wish to see the removal of any designations or limitations that cause differentiation between institutions that are performing similar functions. Distinctions based on adventitious grounds, whether historical or social, are wholly alien to the spirit that should inform higher education.

'It must, however, be recognized that within the wide field of higher education there is a need for a variety of institutions whose functions differ... All are needed to provide appropriate educational opportunities and to supply national needs.

'Furthermore it must be recognised that within these various categories it is inevitable that some institutions will be more eminent than others.... What is important is that what differences there are should rest clearly on differences of function on the one hand, and on acknowledged excellence in ths discharge of functions on the other. There should be no freezing of institutions into established hierarchies; on the contrary there should be recognition and encouragement of excellence wherever it exists and wherever it appears.'[1]

EXPANSION OR PROLIFERATION

Universities tend to be big—they have a built-in growth factor which leads them both to the highest and the widest ranges of learning whether they have small beginnings, start as a combination of two or more independent institutions (e.g., the University of Singapore and the Royal Khmer University), or later split up into separate institutions. Whether or not there should be one or more than one university in every country in its early stage of emergence has largely become a pointless theoretical dispute, despite Professor Arthur Lewis' cost calculations for small countries[1] and Burma's recent move toward specialized institutions (the arts and science core of a university remains both in Rangoon and Mandalay—and perhaps paradoxically this amounts to a return to the more conservative concept of the university as pursuing knowledge unencumbered by technology and professional training). It is extremely difficult to conclude how many such institutions there should be, either in terms of populations, or individual regional needs, or in proportion to other types of institutions of higher learning. Nor, if there were any international norms to offer guidance, instead of bewilderingly conflicting data, would these be likely to prove acceptable or applicable in the changing conditions of developing countries. There are, however, various important implications apparently not always observed by planners.

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[1] *Higher Education, Report of the Committee appointed by the Prime Minister under the Chairmanship of Lord Robbins, 1961-1963*, p. 8-9 (London, HMSO, 1963).

THE SIZE AND SITING OF INSTITUTIONS

First, a university—quite apart from whether or not it is to include adequate residential provision—is a very expensive organism unless the fullest use is made of its extensive range of staff, buildings, equipment, and ancillary services. Thus, the Robbins Committee was '... strongly in favour of building up large institutions and large faculties so as to ensure that individual departments will be able to undertake an adequate range of study and research and that the maximum use will be made of costly equipment.

'On the grounds of economy it is undoubtedly better to provide very expensive equipment in the pure and applied sciences for large departments and faculties than to spread it amongst a number of smaller departments.

'There are equally cogent reasons for economy on the side of the humanities. A library adequate to scholarly research is as essential to the efficient running of a university as an adequate range of computers, and, however far the technique of micro-filming may be carried, it is uneconomical to provide such libraries in a large number of small institutions.

'We recommend that many of the multi-faculty universities of this country should expand to accommodate 8,000 or even 10,000 students. We fully endorse the views held by many teachers that a university changes its ethos if it becomes so large that both teachers and students feel lost in it. But this is not a necessary consequence of expansion beyond the size which many universities have thought appropriate for themselves in the past.'[2]

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1. W. Arthur Lewis, 'Education and economic development,' *Social and Economic Studies*, Vol. 10, No. 2, June 1961.
2. *Higher Education*, op. cit., p. 128, 152-4.

However, two provisos need to be considered in accepting the general consensus of opinion that unit costs, at least up to a point (set at an estimated optimum of quality as well as quantity of 3,000 to 5,000 students at the Tananarive Conference[1] and a much higher upper limit of 25,000 students in American experience), decrease proportionately with the size of enrolment in a multi-faculty institution.

In the desire to reduce *per capita* costs through large enrolments, the facilities provided may be strained to the point where the quality and the nature of instruction suffer seriously to such an extent that deterioration could become significantly responsible for a decline in the percentage of graduates to students enrolled which would in fact raise the *per capita* cost of graduates. The same factor may obviously also affect the quality and extent of research.

Secondly, it is not peculiarly in South-East Asia that provincial or national sentiment combines with practical arguments to site university or potential university institutions rather too widely through the areas whose manpower and cultural needs are to be met. It is such a mixture of reason and sentiment that has been responsible in the Philippines for siting a second State university in Mindanao and sanctioning plans for two more in other parts of the country; in Indonesia for rapidly setting up State universities in each one of the twenty-two provinces[2]—at the rate of more than three a year since 1958[3]—even while the established institutions continue to struggle with very serious shortages of staff and equipment; in Malaysia for proposals to establish a third university on the West Coast and possibly another soon thereafter; and even (reportedly) in a comparatively small country like Cambodia for plans to set up simultaneously four new university institutions. The reasons for proliferation rather than expansion must clearly be examined, but where it is a matter of sentiment, it is well to seek satisfactory, rational alternatives to impractical and wasteful demands, though this approach is not calculated to impress those politicians maintained in office by the sentiments rather than the ratiocination of their supporters.

There are obvious arguments, especially in view of the importance of rural extension work, for locating agricultural institutions of higher education at strategic points in different rural zones, as there are equally strong arguments for siting technological institutes amidst industrial complexes where adequate contact with industry and business may be assured. In the case of universities, the matter is not so clear. It is of course advantageous for these to be established in big cities which are, in their own right, cultural centres.

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[1] *Report of the Conference on the Development of Higher Education in Africa*, op. cit., p. 190.

[2] Including the special territories of the city of Djakarta and the former Sultanate of Jogjakarta.

[3] Seven in 1958 and twenty-four at the end of 1964, including Institutes of Technology and of Agriculture.

On the other hand, universities can start or stimulate social and cultural progress in less well established regions of a country, and it is possible to picture a dedicated community of scholars and students bringing to life a culturally dormant zone through the intellectual and creative atmosphere and activities generated by their life and work. As usual, the effect is easier to visualize than to achieve, for the problematic task of obtaining capable staff and qualified students for new institutions that still have to establish a reputation is made even more difficult where there is no adequate infra-structure of various basic amenities—good schools for the staff children, comfortable housing, adequate medical care and hospital facilities, frequent international and academic contacts and visits. It is not so much that with proper attention and planning such obstacles could not be overcome—though much would depend upon the personality and resolution of the head of the institution; but rather that should such matters be insufficiently considered, the institution starts unhappily and begins to assimilate to its colourless environment rather than helping to change it. Such a prospect is scarcely likely to encourage the recruitment of good staff or students.

The argument that new provincial universities could better help meet the manpower requirements of backward regions may well prove fallacious. The mere circumstance that students study in a certain area does not in itself make it more likely that they will work in it after completing their studies. Only the unenterprising might prefer to stay put where they were bred and educated; the others would follow the call of a mixture of intellectual and material incentives, and it is precisely these others who are most needed where they would not normally wish to go. It is the normalcy of the tendency that must be broken through a variety of measures. Apart from such non-educational administrative measures as rotating government service through different areas of the country, there is, instead of taking institutions to various regions of the country, the alternative of making sure that the best students from all zones have the opportunity of coming to the best national university or universities, just as a selected few are sent abroad for further specialized studies that the country does not or even cannot afford to provide at present. Some of these of course never return; but that is again a matter of incentives. It is true that to be effective a nation-wide catchment of talent would, among other things, require a system of regionally, provincially, or municipally supported bursaries covering a wide range of needs in addition to tuition and residential facilities, but it must also be remembered that were new provincial institutions to be established, the financial burden on local government would normally be more, not less.

Certainly there is something seriously wrong if the establishment of new institutions were to curtail the vigorous development of existing universities and other institutions of higher education. To avoid this, the initial planning step must always be to examine and re-examine whether expansion of the existing institutions would not meet needs and demands. Only when this is not feasible does it become reasonable to plan the creation of new institutions. There are several large universities in the region, but there are many more which are capable of very considerable expansion in both departments and enrolments, in research as well as in teaching and training.

Two opposite tedencies are in fact at work: Cambodia and Laos, at least until recently, have been trying to build up universities on the basis of formerly independent post-secondary or higher secondary institutions; Burma is engaged in fragmenting its two universities into specialized institutions; Indonesia has established new universities at a fantastic pace, but recognizes the importance of old institutions playing a guiding and supporting role as 'mother universities', even while it has cut off faculties of pedagogy from their universities to form a new system of higher teacher training; in the Philippines, the University of the Philippines proposes to extend its system of branch colleges, but there is also legislation to establish two new State universities; in Thailand there has been a move toward unifying independent specialized universities into multi-faculty universities, while two new institutions, starting with an agricultural/technological base, have been set up in the north-east and north of the country.

The divergent tendencies in the development of higher education noted in South-East Asia are also to be found in various forms in a number of advanced countries and, as the following examples show, their practice provides no consistent pattern that could be used to demonstrate a desirable balance between universities and other types of institution. In France, according to the new education plan to be implemented by the end of 1965, the specialized *Grandes écoles* for professional and technical higher education are to continue, but entrance to them, as well as to the universities, is to be primarily from two-year post-*baccalauréat* courses in university colleges—providing a common university base, where formerly entrance measures for the two were quite separate. At the same time, while new universities are being established in the provinces to relieve pressure on the University of Paris, the latter is also establishing new faculties in different parts of the city. In the United Kingdom, while technology and agriculture have fairly recently infiltrated into the established universities, colleges of advanced technology have also developed, and, according to the recommendations of the Robbins Committee, are to become degree-granting institutions to be distinguished from other universities only by their concentration on science and technology, though including social studies and teacher training in their programmes. There are also proposals that some colleges of technology, teacher training and other centres of higher learning might combine to form universities and that training colleges should become colleges of education within university schools of education; and the committee further recommends the early development of a small number of special institutions for science and technological education and research, intended to compare both in scope and in scale with such institutions as the Massachusetts Institute of Technology and the

Technical Universities of Zurich and Delft.[1] In the United States, technical, professional, and fine arts study and research have been fully incorporated in universities, and the original land grant colleges, established with a distinct bias toward agricultural and technical study and training to meet the needs of their particular region, have in many cases become universities in the fullest sense, with national standing and international recognition. On the other hand, there are also institutions with a pronounced technical/professional bias, whilst two-year junior colleges and vocational/technical schools continue to flourish. In the USSR, while parallel streams of university and non-university higher education are maintained, there is a new emphasis on combining practical work with study in all spheres, and although higher education that involves professional training is generally given in specialized institutions, this is by no means always the case—so that, for instance, there are faculties and departments of medicine, technology, and jurisprudence at a number of universities, particularly in the Asian Soviet Republics. But if international practice thus offers no final solution, it does at least point to the viability of very different types of structure, and thus the possibility of adjustment to varying administrative and other circumstances.

TECHNICAL AND TECHNOLOGICAL INSTITUTIONS[2]

It is difficult to find common features in the various types of provision made for technical education in the region. In the academic education systems of all the countries there is a recognizable and significant hierarchy of institutions from the private nursery school through primary school, and the first and second stages of secondary education, to university entrance, a degree course, and finally, a post-graduate course in education, for honours, or, more rarely, for research. It is only at the university stage that the continuity of planning is not altogether maintained, and it is one of the contentions of this report that even this gap should be closed by investing the universities with the ultimate responsibility for all forms of teacher training, and for the development of a first-class inspectorate for primary and secondary schools.

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[1] Proposals subsequently rejected by the Government.

[2] This report is sparing, save perhaps in Chapter 5, in references to commercial education. At the third level, business management, accountancy and other aspects of business administration are taught in arts, social science or other faculties, and the problems that arise are largely of content and method: the major need is for the effective training of Category II personnel—stenographers, secretaries, receptionists, clerks, junior accountants and intermediate personnel in distributive trades. Training of these cadres is at the moment entirely in private hands, and is often undergone on a part-time or evening basis. The first requirement for the training of personnel of this type is, as for all technicians, a sound basis of general education. In the model for technical education to be found later in this chapter the specialized training in commercial education at the Category II level which should then follow is provided for both (a) in secondary-school courses and (b) in professional training after the first terminal stage of secondary education, either in commercial institutes or in commercial departments of technical institutes.

In the technical field the situation is confused, largely through the considerable number of interested parties, ranging from the ministry of Labour with a general interest in trade schools to ministries of aviation with highly specialized training requirements, from the medical world with its isolation, after the pre-medical stage, from other forms of training whether within or without the university, to industry, both in the shape of individual employers, and in federations of industries and employers. Account must also be taken of the reluctance of some conservative academics to involve themselves in professional education. The interest of the technical government departments is of course completely understandable and desirable, if perhaps narrow in its scope, but there are numerous dangers in the existing welter of arrangements. The main interest of most of those involved is the job rather than the individual, who is being trained for work, not educated for living. There is generally little control over the quality or the vocational suitability of the student for whatever course he may enter, and over-production in some areas can proceed simultaneously with a failure to train where manpower is needed: there is no means of correcting the imbalance before recruitment. A steady progress through a series of institutions of rising levels is seldom possible for promising students who have often to wait upon an interminable and wearying series of evening classes before acquiring higher qualifications. What has, with few exceptions, happened is that technical institutes (Thailand, with the exception of the Thonburi Institute), centres (Viet-Nam), or colleges (Malaysia) have grown upward out of secondary technical and/or government training establishments, to include extensive professional training as well as lower levels of technical and trade schools training, with relevantly differentiated entrance qualifications. The danger of this development, or the establishment of such a hierarchy in one institution, is that by a process of in-breeding the technological aspects of the senior programmes are apt to become more and more mechanistic. Indeed even a cursory glance through calendars and catalogues is enough to show that most technical institutions make no provision for education in the humanistic-social context of technology,[1] and that apart from some informative and elementary foundation courses, there is nothing to stimulate conceptual involvement in scientific method and technological progress, much less any consciousness of the direct social pre-conditions and implications of such progress. Since there is no basis for imagining that students have acquired any of these values before entering the institution, it is no exaggeration to say that the situation is one to cause grave concern.

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[1] It is interesting to note that even in eminently practical-minded countries like the United States and the USSR considerable emphasis is given to providing such a background. Thus, in the United States there is some consensus of opinion, if not of practice, that 'the social sciences and the humanities should constitute a minimum of 20 per cent of the engineering curriculum. The word "minimum" is to be emphasized, for the view apparently is widely held that the percentage is inadequate. Nor should courses in this area consist exclusively of the more obviously needed subjects, such as economics and government, but also should embrace courses in music, fine arts, ethics, esthetics, morals, philosophy, drama, human relations, history, and literature. . . . Cultural courses offered as tool subjects in engineering belong to the technical division of the curriculum'.—*Pamphlet No. 114: General and Liberal Educational Content of Professional Curricula-Engineering*, p. 18 (Washington, U.S. Department of Health, Education, and Welfare, Office of Education, 1954).

At the National Technical Centre of Viet-Nam, except for basic science courses in the propaedeutic year and language courses in English and French for the first one to two years (but in the case of 'public works' engineering, courses in political economy, law, hygiene, rural economy and agrarian reform)[1] it is assumed that the student has completed his general and scientific education in secondary school.

Even the SEATO Graduate School of Engineering in Bangkok seems in its courses to disregard the importance of a broad approach, made even more essential by what has been left undone at the undergraduate level. There is not a single course relating to social science, even indirectly in terms of the evolution and logic of scientific methods and technological innovation. The four-semester curriculum on public health engineering, to take one instance, includes a course on the 'Chemistry of Water Sewage' and an elective on 'Introduction to Probability and Statistics,' but not one relating to the sociology of medicine or the psychological factors involved in the successful implementation of public health projects.

This study is not concerned with the evaluation of curricula, but these examples are surely symptoms of a serious structural fault.

In developed countries a solution being increasingly adopted is to place the responsibility for technical training firmly upon industry, thus meeting the industrialists' complaint that the only location for training is on-the-job, which may be true, and the only capable trainers those immersed in industrial practices, which is more doubtful. Such a practice, which in any case might well be rejected on humanistic, if not on economic, grounds, is impracticable in developing countries where individual concerns are still few in number, limited in size and rarely capable of assuming responsibility for their own training schemes. Indeed, the vast bulk of industrial activity is still in the hands of government departments which in general have a considerable skill in imparting proficiency in the operations necessary for carrying on their activities but make no pretentions to further the general education of the young apprentices in their employ. In some cases where training is shared between a government department and a technical institute an opportunity for educational development is certainly presented but is almost inevitably shelved for the more familiar practice of concentrating on the theoretical aspects of the occupation involved.

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[1] This recognition of the importance of general background in a special field, gratifying as it is, is surprising not only in relation to the absence of such a recognition concerning other technical fields in Viet-Nam, but even more in relation to the overall attitude in the region as a whole which tends to ignore such a view as irrelevant.

It is clear that the process of vocational and technical training needs a machinery for integration and planning, for the placing of specialist staff, for vocational guidance, for the placing in industry of trained personnel, and for maintaining a close liaison both with industrial developments and with employers.

This is scarcely a task for ministries of education, already hard-pressed with the development of their present responsibilities, and scarcely equipped by experience, training, or staff to enter far into this field. Ministries of labour are preoccupied with jobs and people rather than pupils, and have little expertise in the business and art of teaching. *Ad hoc* boards—Trinidad, for example, has a Board of Industrial Training with its own institutes—lack authority and, generally, funds. A separate ministry of technology may well dissipate most of its energy in campaigns to define its fields of competence *vis-à-vis* other interested—and jealous—parties.

A MODEL FOR THE ORGANIZATION OF TECHNICAL EDUCATION

Solutions must, of course, be based upon national situations, needs and potentialities, but it is possible to envisage the general applicability of a three-tier system.

The first tier would consist of all forms of vocational, technical and commercial education undertaken during the first ten years of school life, assuming, for the purposes of the model, a six-year primary course and a four-year course to the first secondary terminal stage. Two early aspects of training would be covered, (a) the temporary continuation, while the period of compulsory education is limited to six years, of the artisan courses given to some primary-school leavers, and (b) a permanent feature, the introduction to technical or commercial education arising within secondary studies—preferably given in a secondary school of comprehensive type.[1]

The necessity is for training at this level to become more closely allied with general education, providing a background of skills and knowledge which can be directed at a later stage to first one, and then another, of any forms of specialized training according to current needs and trends. It is clear that responsibility for training in this tier, between the sixth and tenth years of school life, should be an educational one borne jointly by the ministry of education and by whatever body may be charged with the direction of technical institutes.[2] A possible form of organization would be to use the secondary schools and technical secondary schools[3] of the country as nuclei round which would revolve a satellite system of trade schools, apprenticeship schemes and other external forms of training. The aims of the parent institutions would be to safeguard standards, the quality of teaching, the methods employed and pupil welfare, in affiliated trade schools and training schemes, through the services of principals recruited from, and still attached to, the parent body. Thus small trade schools and isolated students would become integrated into the general school system, sharing its full life, and students would be able to transfer without difficulty to other types of institutions when such a measure is found to be desirable.

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[1] See below, p. 315.

[2] See below, p. 304.

[3] As the concept of the comprehensive nature of secondary education develops throughout the region it should follow that the technical schools at the secondary level, as well as the purely academic general secondary schools, will both be transformed into all-purpose secondary institutions: the technical school retaining its specialized

It is possible to envisage a somewhat similar satellite system for the second tier in which the polytechnics, institutes of technology or universities with technological faculties could carry out the same functions at the upper level as the secondary school at an earlier stage, becoming the nuclei of a wide training complex. The parent institutions would need to have an independent status, and to be free from the overriding influence of any particular employing body, whether ministry, public utility, public service or commercial concern. This would involve a governing council enjoying a relationship with the commission or ministry responsible for higher education[1] similar to that of the governing bodies of the universities. This pattern would after all only confirm the status to which a number of technical institutions are already approaching—as with the Singapore Polytechnic, the Technical College, Kuala Lumpur, the technological faculties or colleges of the Philippines or the Centre National Technique in Viet-Nam. The basic missing element is the wider concept of the satellite bodies, whether technical institute, specialized institute, sandwich systems (as in Singapore) or types of training which need much 'on-the-job' instruction (for example, locomotive engineering). These would be affiliated to the appropriate polytechnic, technological university or multi-faculty university, each of which for this purpose would need a director of technical education, acting as the executive officer, and possibly also the chairman, of an interdisciplinary committee for technical training which would also include representatives of industry, the education authority and the affiliated institutions themselves. It is possible that certain specialized satellites, such as schools of commerce, navigation, mining or forestry, would need equally specialized sub-committees to deal with their particular problems, but the principle of emphasizing the educational and broad-based principles of technical training remains.

This possible development of the technical institute into a form of technological university with wide extramural responsibilities has at least one major danger—the creation of a 'conglomeration of professional schools

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capacity would then also cater for those students intending to pursue technical and technological studies after the completion of ten years' general education.

[1] And thus also responsible for over-all policy questions on finance, manpower requirements and future expansion.

increasingly serving the needs of the industrial-bureaucratic State',[1] divorced from the multi-disciplinary breadth of a university and bent exclusively on the training process, no matter how high the level. Should such a development tend to divert schools of engineering or much teaching in applied science from the universities, leaving them as lonely but superior islands of culture in a waste of technology, it would be disastrous. Though the situation has doubtless been exaggerated, it would be useful if joint bodies representing the university and technological complexes could ensure that men of one common world proceeded from both institutions, the academics being in just as great a need of familiarizing themselves with the second law of thermodynamics as the technologists are of becoming acquainted with the works of Plato—or of Pinter.

The third tier, also based administratively upon the technological education departments of the universities and technological institutes, embraces part-time and evening technical courses at technical and technological level, commercial courses at Category II level, post-graduate study and research, and, an element of ever-increasing importance, refresher courses to enable technologists and technicians to keep up to date with the protean advances of their technologies.

This system is summarized in the model shown in Figure 2. It will be understood that the model, built after study of the widely differing practices of the region, is in no sense an attempt to prescribe an optimum system, but rather a scaffolding to facilitate the work of planners in carrying out alterations and making additions to the existing structure. Indeed the rejection of this or that step in the model implies the exercise of deliberate choice between alternatives, which may in itself be an exercise of some value.

In the development envisaged in the second tier, in so far as a university already includes more or less developed natural and social science faculties, there are clearly some advantages in establishing new high-level technological institutions or expanding existing ones, as an integral part of such a university, so as to make full use of available non-technical facilities, whose cost of expansion is likely to be less than that of setting up even a basic minimum of these *de novo*. Such a practice forges a useful direct link between the university and industry and also provides technology with other scentific as well as humane studies. On the other hand, even apart from specific circumstances that may in some cases make it easier to assure sustained industrial and governmental support for a separate technological institute, a division of labour between such an institution and the university has its own advantages. It would enable the latter to concentrate on the development of its scientific faculty and basic research, while the former might take full responsibility for technological education and concentrate on applied scientific as well as

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[1] G. H. Bantock, Reader in Education in the University of Leicester, addressing the Annual Conference of the Institute of Youth Employment Officers—10 October 1964.

FIGURE 2. A model for the organization of technical education

Tier	Level	Age = Grade + 6	Length of course	Terminal: Continuing
1 Post-primary trade courses	(a)	12	Various	T
1 Technical and commercial subjects in general secondary education	(b)	13-16	4 (2+2)	T and C
2 Preparatory courses for third-level technical education	(c) (i)	17-18	2	T and C
Training courses for technicians (Category II) including T.W.I. and sandwich courses	(c) (ii)	17-18/20	2-4	T or transfer to (d)
2 Undergraduate courses	(d)	(i) 19-20 (ii) 19-21/24	1-2 3+	T or post-gradua
3 Part-time and evening courses, technical and commercial	(e) (i)	17+	Indeterminate	T
3 Post-graduate and research study	(e) (ii)	22+	Indeterminate	T
3 Refresher courses for technologists and technicians	(e) (iii)	22+	Not exceeding 12 months	T

aving alification	Main subjects	Location
aving certificate	Specific trade, i.e., building, boot-making, carpentry, metal work, tailoring, etc	(i) Trade school (ii) Vocational annex to secondary school (iii) Junior apprentice in trade
rst school ving tificate[1]	General science; mathematics; social studies with an economic bias; mechanical drawing; manipulative skills; general education	(i) Comprehensive secondary school (ii) General secondary division of technical or commercial institute
cond school ving tificate[2]	University or technical institute entrance requirements—to be acceptable for intermediate trade apprenticeships	As for (b)
ofessional tificate diploma	Teacher training (primary); agriculture; technician training; accountancy—middle level; commercial subjects—Category II level	Specialized institutes, technical institute, commercial institute or polytechnic
Intermediate diploma Degree	Specialized subjects, e.g., engineering; medicine; agriculture, etc. Category I level	(i) Technical or commercial institute (ii) Technological university or polytechnic (iii) Multi-faculty university
tificate; fessional lification; lification for ry to higher el of education	Various	(i) Technical or commercial institute (ii) Extra-mural courses (iii) Correspondence courses and short courses
her degree	Various	Universities and technological universities
	Various	As for 3 (ii)

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1. E.g., General Certificate of Education, Ordinary level; Certificat d'études secondaires du premier cycle (C.E.S.P.C.).
2. E.g., General Certificate of Education, Advanced level; Baccalauréat, Part II.

technological research. These arguments may be rehearsed at length, but it seems that no conclusive case for one or the other approach can be made, and a preference will have to be based on national or local circumstances such as factors influencing a choice of site. In any case the earlier need is likely to be for the establishment of more technical institutes for Category II training as affiliates of the developing institutes now reaching the final stages of their evolution into technological universities.

The possibility and desirability of choice of policy would seem to be extremely limited in the case of small countries like Cambodia and Laos, but in others, it deserves consideration. Indonesia, as indicated, has already established a technological institute and a second is developing; in Thailand the plans for the universities at Khonkaen and Chiengmai may well lead to the advantageous development of such institutes, while the Bangkok and Thonburi Technical Institutes together also present possibilities; in Malaysia the Technical College in Kuala Lumpur, while not a technological institute, offers, like the Polytechnic at Singapore, an alternative training ground for professional engineers. Thus in a *Memorandum on the Development of Technical Education*[1] it is said: 'In this very wide and oft-times highly specialized field both the universities and the colleges of technology have unique and important parts to play. In the advancement of knowledge in any field of study there are two main branches, namely, research and development. Research is undoubtedly the work of universities. It is, however, in the field of development that the college has an important contribution to make. Development work, however, needs the stimulus of students and teaching at the professional level to allow it to bring forth any harvest. Training in a university where the research element forms a large part of the work and training in a college where the development aspect predominates, will both bring forth trained people essential to industry. . . . It is recommended that the work of the University and the College in professional training are complementary to each other. Each should, therefore, be allowed to develop along its own particular path.'

However, while, to meet urgent manpower needs in the immediate future, something like the College of Technology in such a limited form may be needed, serious consideration needs to be given to the possibility of establishing a useful relationship with the university as well as with industry, to the construction of a curriculum acceptable where necessary to external examining bodies and yet realistic in terms of national needs, and to a future growth which would include or maintain adequate touch with both basic and applied scientific research and with the social sciences.

These indications of a possible course of development of technical education, of course, pose policy and administrative problems of the first magnitude and perhaps assume a liberality and a capacity for co-operative adaptation not always to be found within all the universities of the region. However, technical education will, in some form or other, proceed whether or not such a solution is considered. It will not proceed, however, with any prospect of success unless an answer to the staffing problem is found. Accordingly the joint bodies suggested above[1] might also occupy themselves with the establishment of appropriate sections for the training of technical staff at the secondary and diploma levels in teacher-training colleges which should, as has already been suggested, come within the professional, if not the administrative, competence of the universities. This would represent not only another attempt to break down the segregation of technical education but a general broadening of the understanding of the contribution of education to social and economic development.

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[1] N. A. K. Nair (principal, Technical College, Kuala Lumpur) and R. C. Harris (Unesco expert), *Memorandum on the Development of Technical Education*, p. 4 (Kuala Lumpur, 1964).

Such a machinery would also make possible some exchange of staff (as is done between the older and newer institutions in Indonesia), technical student attendance at certain general or specially oriented university courses and seminars, and, of course, opportunities for the suitable transfer of the more able and promising students from the technical to the technological level of studies, or from academic to technological education and vice versa.

Moreover, if this channel of transfer could be devised, there would be far less hesitation among the able students in joining the technical stream as an alternative to academic university education—it would also ensure a challenging opportunity to reach the highest levels as well as offering good openings for secondary graduates not fitted for full university work.

AGRICULTURAL INSTITUTES AND COLLEGES

The question of relationships and co-ordinated growth in technological education also of course arises in relation to other post-secondary institutions. In view of the need to associate agricultural education effectively with life and work in rural areas, there are considerable advantages in siting them in or near such areas, but this need not necessarily mean that they should not be affiliated to a university situated in a major city. The Agricultural Institute in Bogor until recently formed the Agriculture and Veterinary Faculties of the University of Indonesia in Djakarta. The College of Agriculture at Serdang in Malaya has at least an administrative link with the University of Malaya in that its governing council is in formal relationship with the university.[2] The University of the Philippines in Quezon City has its College of

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[1] See p. 305.

[2] Though the advantage seems to be on the side of the university since the statutes of the college provide that 'for the purposes of practical instruction for students of the University of Malaya reading in agriculture, and for any necessary research projects to be carried out by the Faculty of Agriculture of the university, the

Agriculture in Los Baños, but there are also independent public colleges of agriculture in the Philippines as well as several which form parts of private universities. In Viet-Nam, on the other hand, the National College of Agriculture at Blao functions under the authority of the Secretary of State for Agriculture. Lastly in Thailand, while Kasetsart University is in essence a specialized institution for agricultural and associated studies, at Chiengmai the Agricultural Faculty will ultimately form part of a full range of faculties, and at Khonkaen, proposals advanced by Dr. C. F. Bentley and Dr. D. J. Rohner[1] envisage the interesting combination of an Institute for Agriculture and Mechanical Science to play a crucial role in the Thai north-east region in agricultural and agriculture-based industrial development. It is proposed that at the outset, the Faculties of Agriculture and Engineering, supported by an Academic Division providing basic foundation courses in arts and sciences, might respectively concentrate on providing courses in: (a) agricultural economics, agricultural mechanics, animal husbandry, agronomy, social science, and a general programme to which fishery, forestry and domestic science might be added later; (b) civil engineering, followed, as resources permit, by electrical, mechanical, chemical and mining engineering. It is further suggested that, at a later stage, the institute be developed into a full university with the Academic Division growing into Faculties of Arts and Science and with the addition of a Medical and perhaps other faculties. It is, however, also stressed that even the cost of the basic initial phase could not be justified unless at least sixty to a hundred well-qualified students were available for admission to each of the two faculties, with a total enrolment rising to 830 at the end of the first four years.

The FAO survey, the *Present Status of Agricultural Education Development in Asia and in the Far East,*[2] recommends that the agricultural college should be an integral part of a university, and gives the following reference for special consideration: 'Dr. C. B. Hutchison, former dean of the Agricultural College of the University of California at Berkeley... once said that a college of agriculture must be an integral part of a university and should not be separated from it. He explained how the Agricultural College at Davis had suffered from separation from the main campus at Berkeley in the early years. He mentioned that a survey had indicated that the early graduates at Davis were good farmers, but not active citizens; good technicians, but not real scientists.... The implication is that a college student of agriculture should not be narrowly trained, but rather that he should have a

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authority (i.e., the council) shall be authorized to make all necessary arrangements with the Professor of Agriculture of the University of Malaya'. *Prospectus, College of Agriculture, Malaya*, p. 4 (Kuala Lumpur, 1964).

[1] *Khonkaen Institute of Technology.* Joint Unesco-FAO report to the Government of Thailand presenting proposals regarding the Khonkaen Institute of Technology (Bangkok, 1962).

[2] Prepared by C. W. Chang, FAO Regional Agricultural Adviser (Rome, FAO, 1961), p. 5.

liberal knowledge of social sciences and a good foundation in pure sciences.'

But whichever of these approaches is adopted, it is, as stressed at length in Chapter 8, most important that higher agricultural institutions should develop their extension work, and in this connexion, the major colleges may give priority consideration to the establishment of suitable branch institutions in their region—or for that matter even outside it—working in association or collaboration with existing government extension training centres. Starting modestly, these could gradually come to perform crucially important services in further agriculture-oriented education for rural youth, both by their direct training and by facilitating the recruitment of talent for higher studies. Indeed this type of expansion should certainly take the highest priority in any programme of expanding and extending institutions of higher education.

Even where agricultural institutions are separate, careful consideration might be given to the possibility of establishing useful operational links with universities or their affiliates. As it is desirable that all high-level agriculturists and veterinarians should have a sound grounding in the basic sciences—which should perhaps go further than the provision made in most current curricula in the region—there are possibilities of utilizing the existing science facilities of universities, with some necessary expansion and/or the introduction of different shifts, rather than setting up new special provisions in each agricultural college. The same applies to economics, commerce and liberal arts courses that may be included, desirably in all, but certainly in some, agricultural curricula, particularly those specializing in extension work or co-operatives.[1] Furthermore, certain specialized agriculture-related research, for instance in bio-chemistry and biology, may be carried out with more advantage at a fully equipped and staffed faculty of science than in an agricultural college or institute, a situation which greatly influenced the study's manpower consultant, Guy Hunter, in advocating the correlation of training in the basic sciences with agriculture, and stressing the support to be given by scientists to agricultural field officers. The university link would help both to promote such research and to benefit from association with its progress and the staff exchanges that it may involve. Evidently these considerations become even more relevant when, as in the case of Malaya, there may be both a college and a university faculty of agriculture.

OTHER SPECIALIZED INSTITUTIONS

Other higher professional/technical institutions in the region, with the exception of academies of fine arts and music, specialized private colleges in the Philippines and perhaps private universities in Indonesia devoted primarily to law and economics, exist mainly in the form of government departmental training schemes and institutes. It is certainly true that for quite some time to come government departments in all countries of the region will need to depend on various *ad hoc* arrangements for accelerated training programmes: (a) to secure trained personnel of which there may be an urgent shortage, e.g., specially qualified public administrators, statisticians, technicians for government enterprises (and of course officers for the armed services[1] and the police); (b) to give further training to civil servants whose qualifications are insufficient for their responsibilities or who have the ability to benefit significantly from further training or refresher courses.

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[1] In passing it is perhaps appropriate to suggest that those studying agricultural economics and management also require a more adequate grounding in agricultural sciences than they usually receive at present.

But apart from highly specialized programmes such as telecommunication engineering, it is questionable whether, in principle at least, these should be considered as a permanent function of a variety of departments. Given the likely continuing shortage of highly qualified teachers and of other resources, it would seem desirable that as far as possible appropriate arrangements (including contracts) should be made with universities and other institutions of higher education to make provision for the educational, as distinct from the practical, component of these courses, rather than the development of separate facilities which create additional pressures on the scarcity of resources. For instance, if a government department uses its own computers and staff to train new recruits or other staff members that is one thing, but it is quite another if special equipment and staff not needed for the daily work of the department are mobilized to meet the special needs of even a group of departments. Arguments on administrative control and the desirability of avoiding time consuming and perhaps frictional procedures for collaboration in such matters are familiar, but it is difficult to see these obstacles as insuperable.

Even so there are also limits to the rational optimum use of resources. Thus, for instance, in Viet-Nam, the National Institute of Administration, a centre training government administrators for the whole country, which came into existence in 1955, has as one of its three primary objectives 'instilling a serving spirit and a stable political viewpoint',[2] and the implications of this may be unacceptable to a university that wishes to remain politically independent. On the other hand, in the same year, in Thailand, a similar type of course was set up as an integral part of a university programme at Thammasat, leading to a general expansion of its overall research, library, extension and staff training facilities.

Non-university research institutes have already been discussed in Chapter 8; here it is only necessary to stress three points in relation to their development since teaching and training are not normally their primary objectives: (a) It is essential that at least the relative terms of service and recruitment do not draw off much of their best scientific and research talent from the universities. (b) Every effort needs to be made to co-ordinate the research work of the universities and the institutes not only to avoid unnecessary duplication in the investment of resources, but also to provide opportunities for fruitful collaboration, including the possibility of some interchange of staff, for teaching or training as well as research. (c) In so far as the institutes may have certain facilities needed by research students and scholars which the universities do not possess, co-operative arrangements should make it possible for such work to be carried out at the relevant institute. Indeed, as happens in many but unfortunately not all cases, the well-established large institute itself stands to gain by accepting a certain number of post-graduate students as research workers and trainees in research techniques. (It should perhaps be added that it is not always the institute that offers difficulties: universities also are sometimes disinclined to give recognition to work done at one of these institutes for the award of a higher degree.)

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[1] An area which, except for occasional comment, it has not been felt appropriate to cover in any depth.

[2] *National Institute of Administration (Viet-Nam) Catalogue*, revised for 1964, p. 11 (Saigon, 1964).

EDUCATION SYSTEMS: A SUGGESTED STRUCTURAL MODEL FOR FUTURE GROWTH

A general conclusion emerging from this review of types of institutions of higher education seems to be that up to a point it is easier to maintain quality with an expansion of existing structures and their facilities than by a multiplication of independent institutions, particularly at university level. Even the phenomenal expansion of higher education proposed in prosperous France reflects this caution, and it is relevant to quote Rector Capdecombe, former Director-General of Higher Education in the National Ministry of Education, at some length on this subject: 'The dispersal of the French university system has been pursued by a variety of means: (a) immediate or gradual formation of new universities within the territorial framework of new academies[1] formed by reducing the areas of the most populous ones; (b) decentralization of existing universities by opening new establishments (colleges, institutes, schools)[2] in densely populated areas previously unprovided with higher education facilities. . . .

'In practice, the establishments thus created are intended to accommodate students beginning their higher education. It is at this level of studies that the maintenance of contact with the family environment is most valuable, and also that the premises and equipment required are least elaborate and can most readily be standardized, thus making the operation less costly and enabling it to be expedited.

'The new establishments would be in no position to provide *genuine higher*

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[1] That is, regional education jurisdictions headed by the university rector responsible for all levels of education in the region.

[2] Of the university.

education[1] but for the fact that their staffs, as in the faculties, have the dual task of conducting research and teaching, which means that they have to be equipped not only with teaching facilities, lecture rooms, classrooms, etc., but also with the laboratories and libraries essential for the teaching staffs' individual work.

'Nevertheless, this provision of reasonable facilities for basic research is secondary to the necessary *concentration* of the extremely costly tools for highly specialized research, which remain in the *major establishments*, the latter themselves finding it desirable, at this level, to concert activities so as to avoid duplicating such costly special equipment. Where necessary, of course, the staff of the new satellite establishments has access to the main establishment's capital equipment.

'Actually, the decentralization of French universities is based essentially on the opening of arts and science colleges, for it is in the arts and science disciplines that the flood of students occurs.

'Most of the colleges have to *confine themselves to the preparatory courses*, though some do provide courses towards the *licence*. It can be reckoned, however, that if they go beyond the preparatory year, their activity will normally be confined to catering for the short-cycle diplomas created *ad hoc* (DESG, DEST, DELP).'[2]

In this approach there is to be seen an adaptation of a kind of combination of the British university college system and the American junior college (incidentally, rejected by the Robbins Committee—rather perfunctorily according to some academic critics) which *in detail* is like neither. With all this and the Russian picture too before them, it should be possible for developing countries to work out their own compromises which do not involve the self-confounding sacrifice of quality to quantity.

This would be fairly simple for Laos, which surely will not, for a long time to come, think of more than one major institution of higher education with possible and perhaps desirable affiliates, but for others there must doubtless be complex variations. Nevertheless, there are certain general characteristics and conditions that it would seem should qualify all systems of growth.

It has been suggested that many socio-political demands have little relevance to the reality of needs for economic progress—and their satisfaction will often contribute no more to cultural development than to material advancement. But this does not mean that no needs in this category require special attention in educational planning.

The conditions of progress require that the best educational facilities should be provided for the best national talent; and the more mistakes that are made in matching this with optimum facilities, the heavier the odds against an accelerated flight to prosperity. Consequently the institutional system, however organized, must fulfil two basic functions: (a) it must ensure that the loss of talent is reduced to a minimum under given national conditions, and (b) it must make the most of the talent recruited in a balanced fashion, so that all parts of the country benefit to the fullest extent from its subsequent activities.

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[1] The italics in the quotation are all editorial.

[2] L. Capdecome, 'Higher Education in France', *Reform and Development of Higher Education in Europe*, p. 18-19 (Paris, Unesco, 1964. Educational Studies and Documents, No. 49).

Accordingly a possible institutional model, based upon trends within the region, is here outlined in the belief that it may indicate lines of policy and of action when educational planning is under review.[1]

Stage I

The first stage is a common basis of *ten years' general education for all pupils*, instituted on the premise that it is sound practice to develop general qualities and skills before commencing any form of specialized training. Since, however, for many years to come there will be large numbers of leavers after the first six years, those of primary education,[2] the existence, and even the development, of post-primary vocational training, whether in trade schools, by apprenticeship schemes or part-time training, cannot be ignored. It is suggested that such training should be regarded as an interim measure pending the full spread of secondary education and as temporarily terminal rather than the first rung of a technical education ladder: it should lead directly to employment and further education would follow after the experience of work and study in evening classes. For all who proceed to the next four years of secondary education, which is seen as basic to all forms of continuing and uninterrupted education, a number of alternative courses would be provided during the last two years covering a wide range of activities from the scientific background of agriculture to the beginnings of specialization in language study, or from manipulative work with a wide variety of tools and media to the development of mathematical skills. The selection of such alternatives would be based upon a planned system of student guidance and in the larger institutions it might well be desirable to introduce a system of 'setting'. By this means a student would not be allocated to science, arts or technical streams, but would be given a programme selected from a wide number of options according to his particular needs. He would then be placed in classes catering to the level of his ability, and that of his peers, in each special subject.

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[1] This model naturally embraces the provision for technical and commercial education embodied in the model for technical education constructed earlier in this chapter, p. 303.

[2] Seven years if the term first suggested in Karachi for the length of *compulsory* education, and subsequently by some curious process of osmosis applied to the term of *primary* education, is adopted.

Stage II

The next stage of the model offers two alternatives for those continuing their education,[1] which in general may be considered as preparatory to the third and final stage, though both may also be considered terminal.

Alternative one: Second-level technical training. Professional, technical and vocational training at 'Category II' level of two to three years' duration, including commercial training, teacher training for primary education and training in the fine arts, and combining instruction with on-the-job training. Many such courses might be provided by large institutions which might also house full professional training, for example, technological institutes in the cities, specialized institutions, such as agricultural colleges in the country, or in the case, for instance, of para-medical training, a teaching hospital. Clearly an admirable type of institution for housing such training is a polytechnic, which is able to provide a wide range of general services to assist many and varied specialized forms of training from carpentry to commerce.

Alternative two: Pre-university courses. University or technological college preparatory courses of two years' duration based on a careful selection procedure and organized probably, but not necessarily, in the original secondary school and sixth form or *baccalauréat* classes. Such classes might also be attached to the small liberal arts colleges mentioned below since such an arrangement would enable a wider education catchment area to be served than is likely to be the case with the present distribution of secondary schools.

Stage III

The final stage is based upon (a) the multi-faculty or technological universities situated in the few metropolitan areas, and (b) affiliated centres and colleges which, it is suggested, might be developed in the smaller towns and rural areas to act both as a necessary centre for various extra-mural research activities and as the initial means of spreading higher education throughout the countryside.

Multi-faculty and technological universities. At the apex of the model would be either the university covering technological education among its faculties, or technological institutions awarding degrees and carrying out research. These major universities and institutes would develop post-graduate studies and schools, and, at the highest levels, particular areas of appropriate specialization, whether in nuclear physics, rubber technology, marine biology, Islamic law, or linguistics. The aim would be to avoid waste and duplication in the use of limited resources without impoverishing the total concept of 'universitas'.

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[1] The entry point would be at the CESPC, School Certificate 'O' level, or after the ten years primary and secondary courses at present obtaining in Burma and the Philippines.

Multi-purpose affiliated centres and colleges. Such institutions in centres far from the few metropolitan areas might combine a wide variety of functions serving for example, as: (a) an adult education centre, a headquarters of an extension programme and an agricultural college offering both diploma courses and initial courses for the degree of the parent university; (b) a training college for primary school teachers combined with a research institute for social scientists, a regional headquarters for further education or the direction of a literacy campaign, and a programme for training youth leaders; (c) a small liberal arts college offering perhaps a pre-university course, a diploma course in the arts and drama, a social science diploma, and external degree courses in rural sociology, in the national language, and perhaps in education for secondary school teachers.

These institutions, however varied their functions, would, it is suggested, be affiliated to one or other of the major universities of the nation, both in order that standards may be maintained and that staff and students may be kept in touch with current university thought and practices. They would also serve as field stations for research programmes originating in the parent body. The obvious weaknesses to overcome would include the problem of staffing costs and residential facilities, the considerable initial capital cost and the relatively small size of the output in relation to the demand for trained personnel. Advantages would include the spread of the influence and activities of institutions of higher education throughout the country and the creation of what might be termed cultural islands to offer refreshment to a professional staff living perhaps in considerable intellectual isolation. But, above all, a powerful agency would be developed which could make a unique contribution to the task of raising standards of living in the rural areas.

This survey of possible types of institutions, limited as it is to little more than a series of labels, in view of the different practices and concepts of the various countries, has as its aim the dual purpose of spreading the early stages of both post-secondary and higher education widely throughout the countryside whilst strengthening the core of teaching and research to be found in the metropolitan universities and technical institutions.

The development of polyvalent institutions in centres far from the few metropolitan areas, as has been indicated, suggests a number of possible combinations from a wide range of activities. Much would depend on skilful planning and design. It is likely that the establishment or the development of such small educational bases, which do not call for the installation of masses of equipment and machinery and a library of full range, would prove less expensive and more productive than attempts at inflating already overcrowded urban universities. The endeavour to spread and democratize higher education should not defeat its own ends by a process of congestion, but should work towards establishing foundations and forms of growth adequate to give an increasing number of suitably qualified young men and young women the education they have earned and that their country needs.

10. Students, study and welfare

The first Unesco/IAU study, *Access to Higher Education,* points out that 'admission to higher education is not a single administrative act, performed when a student moves from secondary to higher education, but a process which extends over a period of years during which a series of selections determines those students who continue towards the goal of ultimate entry to higher education'.[1] In previous chapters it has been noted how non-academic as well as academic factors thin out the number of pupils from one level of education to the next. This situation certainly deserves careful study and the introduction of measures that will help to prevent the loss of talent at early stages; this report, however, is limited to the factors that determine the transition from secondary to higher education and those which influence early drop-out or ultimate failure to complete requirements for a first degree or diploma. In this context, study and welfare provisions, as well as selection objectives and procedures, must be examined.

SELECTION

With certain exceptions, particularly in Malaysia and Thailand,[2] the initial trend in the region after the Second World War was to provide all who fulfilled minimum admission requirements with the opportunity to enter higher education. However, in the last decade various measures to control entrance to higher education have been introduced or are being developed as a result of circumstances which were becoming progressively more unmanageable. For example the number of candidates seeking admission at the generally low standard required for entrance far exceeded the expansion of higher education facilities, with the result that the overcrowding of classes and laboratories reached saturation point, even with a system of shifts. Moreover, even if physical facilities could be expanded to meet at least part of the increased demand, there was still no short-term possibility of securing the necessary additional staff, even with minimum qualifications.

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[1] Frank Bowles, *Access to Higher Education,* Vol. I, p. 25-6 (Paris, Unesco and IAU, 1963).

[2] And, in several cases, competitive entrance examinations for medical and technological faculties and teacher-training colleges.

The proportion of students dropping out in the first one or two years of courses was high, and somewhat less than 40 per cent who entered higher education in universities where there was no selective entry went on to take a first degree.[1]

Inevitably the quality of graduates was felt to be declining, with a significant proportion holding only marginal passes—a situation strikingly illustrated in the Philippines, where only a small percentage of graduates succeeded in passing the professional and government examinations instituted as a belated recognition of the dangers of a non-selective entry. Increasing selectivity is therefore intended to serve three somewhat different though not necessarily conflicting purposes; to control admissions in accordance with available places and limit overcrowding; to eliminate unsuitable candidates; and to ensure that less able students are not admitted at the expense of others with more ability. A fourth consideration may be added, the desirability of leading students to those fields of study most appropriate to their talents and temperament.

It must be recognized that any process of selection will entail some inefficiency and produce individual cases of injustice. Some good students may fail to gain admission—and the likelihood of this increases as the element of competitiveness in entrance requirements rises—others not so basically capable may leap the entrance hurdle but subsequently falter. Furthermore, conditions of admission that require more than proficiency in the last stages of secondary education may warp the curricula and damage the general education functions of the schools. The task is to reduce such factors to a point where they do not offset the advantages to be gained through decreased wastage and the higher quality of graduates. Again, in order to recruit the best talent from all sectors of the population, it will be essential to combine an adequate system of financial assistance—about which more will be said in relation to student welfare—with a wide network of opportunities for selection. Thus, Dr. C. K. Zurayk,[2] advocating that 'we should exert every effort towards the discovery, *and the cultivation,* of human talent . . . wherever it may be found', finds that a necessary corollary to this policy is that 'we must provide, in all countries, *generous financial assistance for needy students*—and this of an order of magnitude which has hardly been envisaged in most countries so far. If this is necessary in the richer countries, it is entirely inescapable in the poorer ones where many of the promising students are incapable of bearing the various costs of secondary or higher education. It would be wrong to argue that these countries cannot afford such a policy: it would be truer to say that they cannot afford not to do so'. In so far as such a policy is impracticable, it is well to recognize from the start that both selection and success in higher education are bound to be biased in favour of the higher income groups in urban areas.

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[1] Data from the University of Rangoon indicate that in 1961/62, of the relevant entrance group, only 48 per cent passed the intermediate examination and less than 19 per cent took their first degree. In the same year at the University of Saigon the ratio of graduates to total enrolments was 1 : 23, which is extremely low even when one allows 10 to 20 per cent for enrolments in more than one faculty.

[2] *Access to Higher Education,* op. cit., Chairman's Foreword, p. 15-16.

Three main types of selection procedures are current in the region, though they are sometimes used in combination and their nature and application varies within the country as well as between countries: (a) performance in the final secondary or pre-university examination; (b) university or faculty entrance examinations; and (c) propaedeutic years in which students must pass a series of qualifying examinations to proceed to the next stage of higher education, being given a limited number of chances for doing so—usually not more than one to two failures being permitted.

In Cambodia and Viet-Nam the *baccalauréat* is still in principle considered to qualify a student for entry to higher education, but in both countries there is a propaedeutic year of basic studies from which the student must qualify before going on to further studies in the Faculties of Letters and of Science. This, as in France, produces large numbers of initial entrants who fail to graduate. In Viet-Nam there are rigorous entrance examinations for the Faculty of Pedagogy and of Medicine and for the National Technological Centre. In the first, all students accepted receive scholarships and the wastage is negligible. In the second the entrance examination was introduced both because of the pressure of demand on limited available places and because the propaedeutic year system was proving wasteful and costly. In technology, most of the small percentage of a large number of applicants who are admitted complete their course satisfactorily.

In Burma and Malaysia, the matriculation and pre-university examination[1] results, respectively, provide the basis for admission to the university. In Burma it is estimated that in 1962[2] only some 24 per cent of the candidates for matriculation passed; but even so, with the new organization of higher education it is likely that special selection examinations, such as those already held for medicine, may have to be used. Furthermore, a large number of students fail to pass the two-year intermediate examination, so that there is a very considerable thinning of enrolments after this stage—a wasteful process which may be changed by new procedures. In Malaysia, the low wastage rates at the universities of Malaya and Singapore (estimated at less than 20 per cent) suggest that, at least from this viewpoint, preparation and selection at the secondary pre-university level (sixth form) is comparatively satisfactory, though it has in recent years meant that in Malaya only some 28 to 32 per cent of those entering form I reach the Upper VI form. For students who have 'A' level passes in appropriate subjects, allowance is made for direct entry to the second year of university studies in certain faculties, including medicine.

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[1] Higher School Certificate (General Certificate of Education—'A' level).
[2] Pass rates for previous years are even lower.

In Indonesia and the Philippines, practice varies considerably between institutions and faculties: in both countries, with few exceptions, the actual, if not the prescribed, entrance standards tend to be lower in the private universities and colleges. However, apart from special requirements for such subjects as medicine and law, achievement in the final secondary school examination (at the end of twelve years of schooling in Indonesia and ten in the Philippines)—in terms of subjects taken, grades received, and the high school report—is used as a basis for admission. On the other hand, there are a growing number of instances of additional selective procedures.

In the Philippines, entrance requirements for medical faculties have been raised from a minimum of two years of pre-medical studies to three years, and apparently all these faculties, including those in private universities, hold entrance examinations. It is also interesting to note that in tracing a cohort of students at the University of the Philippines from 1948/49 to 1953/54, as against an average of about 17 per cent of the entrants graduating at the end of the prescribed period of study, the corresponding figure for the carefully selected entry to medicine was no less than 89 per cent.[1] Similarly, in Indonesia, since the introduction of more strict admission requirements in medicine together with a system of 'guided study' demanding, among other things, regular attendance at periodical tests and examinations, the ratio of graduates to enrolments has risen from around 3 per cent to almost 15 per cent within the last decade—this together with a steady increase in enrolments.

Furthermore, in the Philippines there is a system of probationary admission for some students who are not considered fully qualified but show promise. Those who fail to justify this belief are generally required to leave at the end of the first year. In subsequent years students who fail to maintain a minimum performance in a consecutive period of two to three semesters are also superannuated.[2] The University of the Philippines in 1959/60 introduced a combined system of tests before admission, a probationary period of eighteen weeks, with examinations at the end of six-week terms, and a general course of two years, which has to be successfully completed by all students before they proceed to higher studies in specialized fields. Some private universities also hold general entrance examinations. Thus the Silliman University holds College Entrance and Placement Tests, which, according to its *Bulletin of General Information,* are also designed to 'aid the student admitted in the selection of his educational and vocational objectives and assist him in understanding some of his strengths and weaknesses . . .'. But for the country as a whole, there is considerable criticism of the varied forms and standards of admission, and one of the objectives of educational authorities in planning for the future appears to be that there should be uniform admission requirements for all college students, whether at public or private institutions, such as passing a national entrance examination on graduating from a government recognized high school and completing a minimum number of specified units.

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[1] *Studies on Philippine Education: Evaluating Students' Achievement*, p. 29 (College of Education, University of the Philippines, Quezon City, 1956).

[2] It must, however, be stated that the standards of grading appear to vary considerably between institutions.

In Indonesia, leading attempts to improve admission procedures (which involve various types of faculty requirements and examinations, including those for the Technical Institute in Bandung, and inter-faculty meetings of State universities which have made some progress in standardizing faculty practices), the University in Indonesia in 1963/64 introduced a comprehensive entrance examination, including psychological tests, and adopted a *numerus clausus* for all its faculties. Some arrangements were also made to hold the examination at centres outside Java, not only to facilitate attendance, but also because it was felt that, in view of differences in school facilities, it was not equitable to bring students from outlying islands into direct competition with those in Java. Results of the examination have not been published, but it appears that a disturbingly high proportion of candidates did not fulfil even minimal requirements.

In Thailand, where previously each institution held its own competitive entrance examinations, a centralized admissions examination for universities in Bangkok was set up in 1963, supervised by the National Education Council. Examinations are held in some twenty subjects, question papers being set by the relevant faculties. Each candidate is required to take five papers, selecting subjects in accordance with the faculty or faculties (stated in order of preference) to which he seeks admission. The selection, based on grades obtained in different subjects, aims both at directing successful candidates to the faculties for which their results best qualify them and, also, in so far as vacancies exist, at offering them admission to faculties in accordance with their personal preference. The necessity for some such machinery is shown by the fact that in 1963, for 5,000 university places there were 20,000 candidates, including applicants from technical/vocational streams as well as from previous years of the academic stream.

In various types of non-university post-secondary education (including teacher, technical and other vocational training) in the region, minimum admission requirements for a number of courses[1] specify less than a full secondary schooling—generally amounting to a total of nine to ten years at school.[1] In most cases these institutions face demands for admission which go far beyond their capacities, and they are therefore obliged to hold competitive entrance examinations. Indeed even where such programmes include in-service training or are primarily intended for up-grading civil servants such candidates must often also meet competitive entrance requirements—and in Viet-Nam, for instance, civil service applicants for admission to the National Institute of Administration are given no preferential treatment over other candidates.

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[1] With the exception of the Philippines.

While the recognition of the need for adequate selection is thus matched by a growing number of measures to improve current situations, there is also both an insufficient co-ordination between procedures in many of the countries and a great opportunity for each of them to learn from the properly investigated experiences of the others. In this context, Dr. Bowles' comment[2] on three generally recognized criteria for selection provides a concise global evaluation:

'1. Examinations administered either at the close of secondary school or at entrance to institutions of higher education:

'(a) *Subject matter examinations*.... Experience shows that: students whose performance on subject matter examinations is superior are capable of satisfactory work in higher education; students whose performance is mediocre may or may not do satisfactory work in higher education; and students who fail these examinations are, nevertheless, in some cases capable of satisfactory work in higher education. This means that subject matter examinations, used as the sole criterion, may introduce a number of errors into the selection process. The number of errors so introduced will depend in part on the care with which examinations are made and administered.

'(b) *Academic aptitude examinations*. Measurements of general ability obtained with examinations known as academic aptitude tests are employed in the United States in conjunction with other criteria. Such examinations are being experimented with or used to a limited extent in some other systems.[3] Experience shows that this type of examination, when used as the only basis for selection, performs in about the same manner as comprehensive subject matter examinations. But when used in conjunction with the criterion of academic achievement in secondary school, these examinations provide additional useful information about a student's probable performance within higher education.

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[1] In Viet-Nam this also applies to the *Capacité en droit* course given by universities.

[2] *Access to Higher Education*, op. cit., p. 159-60.

[3] The Robbins Committee, in addition to their 'old-fashioned suggestion' that more attention should be paid to school records and their improvement through collaboration between university and secondary school (para. 229), also recommended that such aptitude tests might shift some of the predictive load away from academic examinations and that such methods should be investigated. *Report*, op. cit., para. 233 (editorial comment).

'2. Academic achievement established by secondary school performance. This criterion is used extensively by only one major educational system, the United States, where it is given the heaviest weight in selection. In this system, external examinations in the form of aptitude and subject matter examinations are used primarily to verify the quality of secondary school performance. Studies in a number of countries have supported the finding that past performance in studies provides the most reliable basis for estimating future performance in studies.[1]

'3. Judgements as to the candidate's potential for development, based on ratings from secondary schools or on interviews. Criteria of this type are often employed informally in many systems. Experience indicates that such judgments, taken alone, do not provide a very reliable basis for determining the capacity of students to do satisfactory work in higher education, but that they occasionally furnish useful criteria when used in conjunction with either examination results or secondary school performance or both.

'It has been amply demonstrated that a combination of all three types of criteria produces the most successful selections. However, applying them requires a complex decision-making process for each individual candidate, which makes for an expensive and time-consuming selection.'

Nevertheless, in considering the costs of alternative systems and the expense of the more adequate procedures, it must be remembered that this needs to be compared with costs arising from the lack of an adequate system: high wastage rates, the loss of potential talent, and the direct financial burden of the long (usually at least one year) weeding-out processes within higher education, including the propaedeutic year system and the repetition of courses up to a maximum of permitted failures.[2] An expensive selection system is more than justified if it reduces the ultimate cost per graduate and at the same time also reduces the chances of error in selecting the best available talent, with an equal opportunity for all to demonstrate their capacities.

Furthermore, particularly where there are several universities as well as different types of higher education, it is evidently desirable that there should be some form of clearing house admissions system (towards which Thailand has at least taken a first step and the Philippines is possibly moving through proposals for national entrance examinations) with, in addition to its prime objective of assisting in the selection of students for different institutions, three other basic functions: (a) it should not merely tell the student that he is not suitable for entry to a particular institution or course of higher education, but also, where his abilities warrant it, inform him of alternative opportunities and assist his placement according to his preference; (b) it should ensure that whatever other disadvantages might be suffered by students from comparatively backward geographical areas and lower income groups, the selection system is nationally so organized—with appropriately dispersed examination and admission centres—that candidates, at this stage at least, should have a full opportunity to show their capacity; (c) it should promote constructive collaboration between higher education institutions and secondary schools.

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[1] It must, however, also be noted that where this basis is used but applied with varying standards by different institutions, a high drop-out rate may persist: thus in the United States only about 60 per cent of higher education entrants graduate compared to about 86 per cent in British universities (editorial comment).

[2] It should, however, be added in justice to its advocates that for those who can afford it such a system is undoubtedly the most just and the most unlikely to lose high talent through organizational or temperamental hazard.

This again involves a complex and costly operation—particularly in countries (such as Indonesia and the Philippines) with large numbers of higher institutions and huge catchment areas for students—and considerable government support as well as effective institutional co-operation. But apart from the great benefit it would render in meeting both the human right of access to higher education and the national need for talent, it would also—perhaps more mundanely but with considerable practical importance—reduce the cost of admissions procedure for individual institutions. A beginning might be made with the provision of a limited number of services (such as channelling applications, facilitating cross-reference, and providing information and advice to students) and a restricted though growing coverage.[1] Finally, such a system may ultimately develop a most useful co-ordination with both a comprehensive nation-wide provision of financial assistance for able students who cannot afford the cost of higher education and a consistent and organized attempt to guide suitable students into areas of study in which there is a shortage of graduates, with consequential good employment opportunities.

SOCIO-ECONOMIC ORIGINS OF STUDENTS

The question of the geographical and socio-economic origins of students has, except for a few isolated institutional studies, not been investigated in the region; but there is a widespread impression—supported by such data as the urban siting of most higher secondary schools, the consistent as well as considerably higher levels of educational attainment of the population of major urban centres, the generally limited residential facilities and the lack of adequate bursary systems—that a majority of students come from middle and upper income groups in urban areas. In so far as this is true, a comparatively large proportion of a small section of the total population has an access to higher education which is open to a very small percentage of the great majority. On the other hand, considering the sizable number of students who for lack of sufficient financial assistance must in many countries work[1] in order to study, and study without an adequate provision of textbooks and other educational materials, and of housing and nourishment, there must be many who come at least from the lower middle income group, perhaps particularly from those formed by the school teaching profession and the lower paid clerical and commercial groups. Nevertheless, the following data confirm the general view that recruitment to higher education is largely confined to a small sector of the population.

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[1] Thus the clearing house system recently established in the United Kingdom does little more than channel applications and excludes Oxford and Cambridge, the Scottish universities, and non-university institutions such as the Colleges of Advanced Technology.

1. According to a survey (1953)[2] carried out by the Indonesian National Union of Students and the World University Service Committee at the University of Indonesia: '46.4 per cent of the students come from the following milieux: professors, free occupations, officers, entrepreneurs and high rank civil servants; 41.5 per cent from secondary school teachers, middle-class business men, middle rank civil servants, and pensioners; and 12.1 from elementary school teachers, lower rank civil servants, non-commissioned officers, and small peasants.' A later sample survey by Fischer[3] made in Indonesia in 1960 showed that the parents of 60 per cent of the students were government officials, pensioners and teachers, and about 75 per cent of them came from large urban centres.
2. A survey of first-year students in 1962/63 and 1963/64 carried out at the University of Malaya in the course of the present study showed that over 75 per cent of the student body came from towns with populations of over 10,000 and nearly 60 per cent from towns with populations of over 50,000. Some 75 per cent were non-Malays, either Chinese (57 per cent) or Indian (18 per cent), mostly from professional and business families. Of the Malay students, forming only 22 per cent of the enrolment, nearly 60 per cent reported fathers with professional, civil service, or clerical occupations. Of the total first-year enrolment only about 5 per cent indicated farming as their parents' occupation.
3. In Thailand, a sample survey of third-year students at the Agricultural University (Kasetsart) showed that over 70 per cent of them had never engaged in agriculture and only 20 per cent reported that their parents were farmers.[4]
4. In Viet-Nam, a survey of students of the National Institute of Administration[5] brought out the following conclusions: 'A breakdown of the

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[1] In Indonesia and Viet-Nam, it is estimated that some 60 to 80 per cent of the students are dependent on income from part-time work.

[2] *Economic Factors affecting Access to the University*, p. 120 (Geneva, World University Service, 1961).

[3] J. Fischer, 'The student population of a South-East Asian university: the Indonesian example', *International Journal of Comparative Sociology*, Vol. II, No. 2, p. 232-3.

[4] A. Nakajud, *A Study of Students' Backgrounds in Relation to their Agricultural Experience* (Kasetsart, Bangkhen, Bangkok, 1961).

[5] Jason L. Finkle, *A Profile of NIA Students*, p. 10 and 22 (Saigon, Michigan State University Viet-Nam Advisory Group, 1961).

> geographical data provided by respondents reveals that families of students were highly mobile even prior to the evacuation to the South in 1954-55. In both the North and South, there was a marked tendency to take up residence in Viet-Nam's largest cities,[1] Hanoi and Saigon. . . . By late 1959, of 135 students with living parents, almost half gave as their parents' residence the greater Saigon area (accounting for only 11 per cent of the population). . . .
>
> 'The typical NIA student is a member of what may be designated the "Vietnamese middle class". . . . Those from the highest social-economic groups in Viet-Nam are able to pay their way through the University of Saigon or study abroad. There is a belief among Vietnamese, whether valid or not, that the university and particularly foreign study offer greater prestige and provide better access to important positions in Viet-Nam than does the NIA. Young men and women from poor families, on the other hand, who might be prospective applicants for admission to the NIA, have often had inadequate or interrupted educations.'

Concern at the imbalance in recruitment to higher education is universal, but little financial provision is made to overcome the economic barrier. On the other hand, it must also be noted that several highly developed countries suffer from similar problems and that some of the socialist countries, Jugoslavia for example, have dealt with them through quite special measures—though possibly their definition of the 'worker' category includes, unusually but not unreasonably, a broad sector of the large number of civil servants in all walks of life. In France, in 1958, 20 per cent of the university enrolment came from farming (including landlords) and working classes, though they formed well over 65 per cent of its population. In the Federal Republic of Germany, in 1955/56, enrolments represented about 27 per cent of farmer (4.4 per cent) and employee (22.6 per cent) family origins, and 48 per cent of the upper income group, which formed only 12 per cent of the population. In the United Kingdom, in 1950, while some 66 per cent of the students at Oxford and Cambridge came from professional or managerial classes, at other universities the proportion was little more than one-third; corresponding percentages for the 'manual workers' category were 7 and 20 per cent. By 1960/61 the percentage of undergraduates in all British universities whose fathers were engaged in manual operation had risen to 25 per cent, with 12 per cent in clerical employment. Nearly 80 per cent of all students were receiving some form of financial assistance.

The changing balance in the socio-economic composition of university enrolments in the West has been the result not only of the generous provision of financial assistance, but also, particularly in the socialist countries, of a policy-dictated campaign to democratize education at all levels and frequently, in providing generous financial assistance, to give preferential treatment to those who had in the past been handicapped by their socio-economic position, educationally as well as financially. But while a combination of widespread talent search and financial assistance can help to deal with the complex over-all problem, the ultimate solution must surely lie in adequately democratizing pre-university education, not only in quantity but also in quality—and, no less important, in influencing family attitudes to higher education in such a way that all parents, instead of a few traditionally conditioned families, regard it as a desirable stage in their sons' and daughters' education. The importance of this social rather than economic factor is well brought out in the following analysis of the situation from the Federal Republic of Germany. 'On the whole, it seems that entrance to higher education is not simply a function of the material circumstances of the family. It is also closely related to the attitudes and pre-conceptions that different social groups form of their own position, tasks, and goals, within the total social framework. These social frames of reference (*soziale Leitbilder*) do not only regulate political and cultural life; so far as parents are affected by them, they also determine the interests and education of the following generation. They are as a rule strongly conservative in character, changing slowly and with reluctance, for they are not so much the result of an objective evaluation, as of unconsciously adopted influence of tradition, environment and upbringing.'[1]

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[1] A similar move toward large urban centres was also shown by data collected from the University of Malaya.

But in developing countries generally, and those in South-East Asia in particular, there is, in belief as well as in fact, an unprecedented opportunity for advancement through higher education which is nowhere matched by the economic advantages of other channels of occupation and training. It is generally at the earlier levels of education that obstructive factors enter, leading to a preference for children to work in the field, or the factory—or at home, in the case of girls—rather than going to a secondary school or even completing the primary course. Once this barrier is crossed, the desire for higher education is fairly universal, and the obstacle to it, apart from insufficient trained ability, mainly economic. And it is at this level that the extent and design of the provision of financial assistance and residential facilities become crucial.

This consideration of what students are admitted to the universities, and how this happens, has lead logically to the basic need for a systematic admission policy—the raising of secondary-school standards throughout the country and a system which, whilst selective, is supported by the bursaries, residential accommodation and other forms of assistance necessary to bring a university education within reach of anyone who shows himself qualified to attend a university. At this stage, however, having accepted the general argument of the chapter by considering what is done with students when they are admitted to the university. Further consideration of such matters as bursaries and boards is accordingly deferred until the general question of student welfare is reached.

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[1] *Economic Factors affecting Access to the University*, op. cit., p. 34.

COURSES AND CURRICULA

Apart from specific study requirements of particular disciplines—a consideration of which is outside the scope of this study—the two most important general issues for course and curricular organization at the higher levels are their interrelation with secondary pre-university education, and the adequacy of the foundation they offer for the fullest development of the individual and for the advancement of knowledge, applied no less than theoretical. There is here, in view of the prevalent inadequate or unbalanced quality of secondary education—and it is not a problem peculiar to the region[1]—an obvious bipolarity: a movement toward high norms in one direction and an adjustment to insufficiently trained material provided by secondary schools, in the other. The problem is generated in the secondary schools themselves: how can they provide adequate entrants to higher education, without becoming such a slave to this task that every secondary school graduate who fails or does not wish to enter higher education tends to become a misfit—of, at the most, modest advantage to the economy in any walk of life, and a potential source of discontent and resentment and general social malaise?

The problem is only partially reflected in the following national statements[2] on the nature and purposes of secondary education, largely in terms of the diverse functions it is expected to perform:

Burma[3]

'1. To ensure a knowledge of the three R's among all citizens of the Union.
'2. To ensure the production of a sufficient number of technicians and technologists.
'3. To train and equip young men and women so that they can adequately and efficiently perform their various duties as citizens of the Union.
'4. To eradicate illiteracy and produce men and women who possess the "Five Strengths" (physical, intellectual, moral, social, economic).
'5. To perpetuate democracy within the Union.

'Summing up, the aim is to give a liberal education and technical training based on secondary education, in order to help pupils become useful elements in the community and the nation and to elevate general cultural standards and help pupils acquire professional skills.'

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[1] Even the British university teacher quite frequently complains, of all things, about the many university entrants who are unable to express themselves clearly in the English language.

[2] Abstracted from the country reports in *World Survey of Education. III: Secondary Education* (Paris, Unesco, 1961).

[3] ibid., p. 296.

Cambodia.[1] 'The aim of general secondary education is to provide Khmer youth with a humanistic training, i.e., to develop the intelligence and personality of the pupils, to inculcate in them a love for national and international culture and civilization, and to arouse their interest in science and technology.'

Indonesia.[2] 'In view of the rapid development of the country's industrial, economic and business life it is felt that the balance between secondary general and vocational education has to be restored. Budget figures for secondary education indicate a distribution of 60 per cent for general education and 40 per cent for vocational. The idea now adopted (1960) of a distribution of 70 per cent for vocational and 30 per cent for general cannot be realized while the financial situation of the State is such that the diversion of more funds for vocational education could only be at the expense of general education.'

Malaya.[3] '... it is becoming increasingly obvious that not all who find their way into secondary schools are fitted for an academic career, nor does an academic career necessarily suit the opportunities for employment that exist in modern life. School certificates are no longer a passport to a successful career, and there is an increasing need for more technical and vocational training to fit people for work in the new industries.

'While this is sufficiently obvious to planners wrestling with financial restrictions in order to meet the need, it is not so obvious to the general population. Malaya faces the problem common to many countries, that tradition has accorded extra kudos to white-collar jobs, and there is a shortage of those who wish to become engineers and technicians below university degree level. It is the problem of the educated unemployed, or of the man forced to do a job that he thinks is beneath his dignity.'

Philippines.[4] '... the general secondary schools in the Philippines aim to: (a) continue the work of social unification begun in the elementary schools; (b) discover the varying abilities, interests and aptitudes of young people, and offer courses in the different fields of productive endeavour corresponding to such abilities, interests and aptitudes and to the needs of the community; (c) initiate a programme designed to develop community leadership.

'The secondary schools should develop vocational efficiency and should also offer courses to the students who will continue their studies in colleges and universities.'

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[1] ibid., p. 306.
[2] ibid., p. 669.
[3] ibid., p. 814.
[4] ibid., p. 955.

Thailand.[1] 'The general secondary course offers a better opportunity and a wider choice for further study at a higher level, and it is not surprising therefore that students prefer this to the vocational line. In view of this and also of the fact that the student in the lower vocational school, immature mentally and physically, cannot derive maximum benefit from vocational study, the Ministry intends to revise the curriculum of secondary education. It is considered preferable to have only one type of lower secondary education, so that a student can thereafter choose either a general or a vocational course at upper secondary level....'

Viet-Nam.[2] '... in 1958, secondary education was basically reformed in accordance with the following three principles:

'*First principle.* Education in Viet-Nam must be inspired by humanism; it must respect the sacred character of the human person, regard Man as an end in himself and strive for the full development of the human being.

'*Second principle.* Education in Viet-Nam must be national, respect traditional values, strengthen the bonds between Man and his environment (family, occupation, country), and strive to promote the security and prosperity of the nation and the advancement of its people.

'*Third principle.* Education in Viet-Nam must be open to all, respect the scientific attitude as a progressive factor, inculcate a social and democratic spirit, and recognize what is authentic in all the different cultures of the world.'

In contradistinction to the generally comprehensive nature of these aims, one finds that, as shown in Chapter 2, secondary enrolments are heavily concentrated in the academic stream,[3] and the curricula and examination structures of this are largely geared to preparation for entry to higher education and little else. If such specialized training were necessary because most of the students in the last two or three years of the academic secondary stream subsequently entered higher education and were well prepared for this, the situation might be tolerable; but with the exception of Malaysia's intensively selected sixth formers, a substantial proportion of higher secondary school leavers do not enter the university, and university teachers are quite uniformly critical of those who do. Everywhere complaints may be heard that students coming into the university are deficient in their factual background—particularly in the foreign language medium, mathematics, and science—that they lack initiative, they have to be 'spoon-fed' and think of their studies only in terms of passing final examinations.[1] It is perhaps right to suspect that the fault does not lie only with secondary education, but also at least in part with uninspired teaching in the universities, which likes to shift the burden of its inadequacies to the earlier levels of education; but the need for remedial courses in languages and general education are all too prevalent to be thus explained away. The crucial importance of improving secondary education needs no advocacy: 'since the Second World War practically all educational authorities have taken the view that earlier conceptions of secondary education were too narrow, that they over-emphasized the intellectual aspects of the human personality to the neglect of social, aesthetic, moral, and ethical values, and that they gave too little attention to the everyday needs of the growing adolescent.'[2] But precisely because of its manifold shortcomings, in what direction should secondary education concentrate its efforts for improvement? It is clear that the balance between at least higher secondary (after grades 9 or 10), vocational and academic education needs to be corrected, but the implementation of this is difficult because of social as well as financial pressures; and in any case present trends make it unlikely that selection to the academic stream can be so limited as to provide most of its graduates with places in higher education. Thus it must find ways in which it may provide both a more complete and a better preparatory education. This of course raises problems exemplified in the following observation in the *World Survey of Education*:[3] 'One of the most persistent problems that have been faced by secondary schools during the past thirty years is the problem of the overloading of the course of study and the overburdening of the pupils. This problem has been most commonly found in the academic secondary school or in the more academic courses of the comprehensive schools, and it is closely related to problems of preparation for the examinations that permit entry to the universities and other selective institutions of advanced education. The essence of the complaints is that the pupils are burdened with too much intellectual work and that the strain of prolonged study, combined with anxiety lest they fail in their examinations, has a deleterious effect upon their physical and mental health. Furthermore, many teachers maintain that numbers of intelligent young people are being given a distaste for learning instead of a love for it, and that this leads to a waste of academic talent. The problem has become more apparent in recent years with the increase in the secondary school population, for what was once a situation affecting only a few thousand pupils is now the concern of hundreds of thousands. . . .'

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[1] Ibid., p. 1073.

[2] Ibid., p. 1454.

[3] Apart from the influence of traditional preferences and dislike for manual work, another realistic explanation given for this in Indonesia is that the per student cost of technical-vocational secondary education is about three times that for the academic stream, which it is therefore financially easier to expand, though with considerable deficiencies in the provision of laboratories for science teaching.

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[1] This complaint is part of a lament with a multiplier effect heard first as infants enter a junior primary school—it is global, and can be heard from Cambridge to Kuala Lumpur, from Saigon to the Sorbonne.

[2] *World Survey of Education*. III, op. cit., p. 133.

[3] Op. cit., p. 146.

On the other hand, the design of secondary curricula to meet both demands is made easier when it is recognized that the worst faults of secondary education from the viewpoint of universities are also its worst faults as a terminal stage of education. The dichotomy, as might be expected from narrowly considered examination requirements, does not lie between secondary academic education oriented toward specialized branches of higher education and the needs of a terminal secondary education. It lies in fact between the appearance of serving the particular demands of higher education and the true requirements of both a grounding for specialization and a foundation for success in various other walks of life, including, in particular, multifarious positions of minor administrative responsibility, work in vocational fields in which training may be given on-the-job, and further study opportunities on a part-time or correspondence basis. It is true that a case may be made to include elective subjects in the higher general secondary curricula that enable students, according to their ability and likely entry into either the university or technical-vocational higher education or directly into the labour force, to concentrate on a more conceptual or a more practical training. But what is most important is that secondary graduates should have a sound general education—including a good command of language, a basic knowledge of mathematics and the natural and social sciences as well as an experience of literature and the fine arts, a sense of initiative to think out problems independently—and a direct acquaintance with the realities of life and manual work. Indeed, useful as these qualities would be to those who do not continue their formal education, high attainment in them should be a far better passport to success in all branches of higher education than specifically specialized preparation in a narrow field.

The main point, however, is not to suggest the exact balance and differentiation within secondary general curricula, but to conclude that to achieve this in any satisfactory way, it is essential that universities and general secondary schools develop their co-operative relations far beyond the kind of relationships that exist at present. University entrance requirements and examinations should be jointly reviewed by competent university and secondary school teachers and administrators acting in concert with employers of all types, to cover both the public and private sectors in such a way that these requirements exercise a beneficial rather than distorting influence on secondary curricula and teaching. Such revisions must in turn, through the university, influence the training of secondary school teachers and those who prepare secondary school textbooks and other educational materials. Finally, within its area of competence, the individual university should maintain direct contact with higher secondary schools,[1] including (a) a two-way process of adequate reporting from the school to the university on candidates for admission to it and from the university to the school on the performance of those who are admitted; (b) joint seminars on questions of common interest; and (c) some exchange of teachers for refresher and research work at the university and for teaching and experimental research in the schools.

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[1] See also the section on 'Teacher Education and Training' in Chapter 8.

The extent to which universities and other institutions of higher education can reform their courses and curricula to bring them in line with changing educational needs and also with the maintenance of high quality will, in large measure, depend on what is achieved at the secondary level through the various suggested processes of improved co-operation and selection. The universities, for instance, cannot afford to give up remedial teaching provided in language, science and general courses, until basic secondary-level deficiencies in these areas have been removed. On the other hand, such courses must be kept under constant review so that they may be remodelled or replaced as improvements are achieved at the secondary level, a process which can be expedited through progressive changes in admission requirements and varying emphases on the different aspects of secondary education and training for which they call.

In the meantime, however, foundation,[1] preparatory, and remedial courses inevitably eat into the time available not only for specialization, but also for a higher level of general education, whose importance has previously been stressed.[2] It is, therefore, hardly possible to find a temporary remedy pending a final solution, which does not involve an additional period of one or more years of pre-university study, attached administratively either to the higher secondary level or to the university, depending on which measure is more favoured by the nature of specific structures and educational resources (e.g., teachers, laboratories and libraries). There are obviously major difficulties in introducing such a measure, including an increase in the total period required for graduation and in per student expenditure; if it is rejected on these grounds, it should also be recognized that the saving is inevitably made at the cost of quality. However, some time and expense might perhaps be saved by drawing all or most of the additional study period from a lengthened academic year. At present, the academic year, with some variation, roughly ranges around thirty weeks, with an average weekly formal instruction range of fifteen to twenty-five hours—the load being noticeably greater in courses involving laboratory work. It is far from clear that the leisure this allows the student for independent study and extra-curricular activities is necessary, and even if it were, that proper use would be made of it. There are, nevertheless, other practical difficulties which would have to be overcome in introducing such a change. Care would have to be taken not to deprive the student of time for independent work; staff strength would have to be increased to compensate for the additional total teaching-load, and to preserve adequate time for post-graduate teaching and research. Appropriate arrangements would also have to be made to prevent such a measure from excluding students who, for financial reasons, are able to study only by working part-time. Finally it would be regrettable if the lengthening of the academic year precluded the organization of vacation courses, conferences and other corporate activities which enable those who do not belong to the university community to become familiar with the amenities of the campus and the wisdom of the staff.

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[1] It may perhaps be permitted to wonder whether the additional 'Foundation Course' year at Keele, in England, is not in fact an attempt to remedy the deficiencies of over-specialization in the secondary schools caused by faculty entrance demands. Academically, would not the so-called Foundation Course be even more effective if taught as a compulsory fourth and post-graduate year?

[2] See 'Cultural Development' in Chapter 8.

But disturbing as the provision of a longer period of study may be, the following rough data, while not comparable, do suggest that, given the considerable differences between countries (which, with the exception of Malaysia, are after all not so different in their resources) and between the requirements of various subjects, the difficulties of modification should not be insuperable, particularly in Burma and the Philippines, which have only ten years of schooling.

It is interesting to note that the greatest variations occur in the arts and science fields—which is perhaps in conformity with the irony of the fact that these fields of study, which should attract the best intellects, have as a matter of fact become catch-alls. In engineering, the Burmese and Philippine additional one to two years added to the usual four-year arts and science courses help to make up for the shorter pre-university education. In the case of medicine, similar adjustments are made to reduce, with the exceptions of Burma and Cambodia, the difference between total periods of formal education to one year. However, in the arts and sciences, the duration of the first degree course varies from three to five years and the total period of formal education, even more, from fourteen to seventeen years.

The plea made here is not for uniformity, but for the possibility of modifications in the total period of study required for a first degree. Weighty arguments indeed would have to be brought forward to justify why, other things being the same, what has been done in one case cannot be done in another. The financial argument, that with limited funds it is not possible to improve quality in all fields of higher education and precedence must therefore be given to those which are most closely associated with urgent national needs, takes too narrow a view of the practical importance of the arts and sciences, and it is at best an excuse for not doing what is clearly desirable. It must, of course, be stressed that it is not only the number of years that matter, but also the intensity and intelligence with which studies are pursued. However, it is in the optimal use of available time and money that final solutions must be sought.

TABLE 50. Minimum years of study for pre-university education and for certain courses of higher education

Country	Total years of primary and secondary schooling	Diploma or other intermediate qualification before first degree[1]			First degree (including preliminary or diploma study periods)					
					Arts/Science[2]		Engineering		Medicine	
		Designation	Duration	Total	Higher	Total	Higher	Total	Higher[3]	Total
Cambodia	13	—	—	—	4	17	4	17	4+3	20
Malaya	13	—	—	—	3-4	16-17	4	17	1+5	19
Indonesia	12	*Sardjana muda*	3	15	5	17	4	16	1+5	18
Singapore	12	—	—	—	3-4	15-16	4	16	1+5	18
Thailand	12	Diploma	3	15	4-5	16-17	4	16	2+5	19
Viet-Nam	12	—	—	—	4-5	16-17	4	16	1+6	19
Burma	10	Intermediate	2	12	4-5	14-15	6	16	2+5	17
Philippines	10	Associateship	2	12	4	14	5	15	3+5	18

1. There are also several lower-level diplomas in agriculture, law and technical fields to which entrants are generally accepted from the ninth or tenth grades of school. For instance: in Malaya, a technician's diploma obtainable after three years of study following ten years of schooling; in Thailand, vocational and technical diplomas obtainable, respectively, after three years and five years of study following eleven years of schooling; and in Viet-Nam, the *agent technique* and law diploma obtainable after three years of study following nine years of schooling.
2. The longer period of study refers either to honours or other special courses.
3. The first figure refers to the period of pre-medical or a first stage of studies and the latter includes internship, where this is considered part of the course.

While what is done at the secondary level in this respect[1] is of crucial importance to what happens later at the level of higher education, the issue, in the regional frame of reference, leads to the question of the general design of curricula and intensity of effort in higher education, on the assumption that the authorities responsible for secondary education are equally concerned about the future of their graduates as they enter the universities.

First of all, far from sufficient consideration seems to have been given to the balance of enrolments in and graduations from the different levels—pre-degree diploma, first degree, and post-graduate studies. Even where an intermediate diploma exists, it mainly marks a transitional stage which, if it happens to become final, is accepted willy-nilly for certain purposes: it has an administrative function instead of being conceived in terms of satisfying certain limited individual capacities and the lower echelons of high-level manpower requirements. There is both room and need for individuals whose capacity is fully extended in reaching the middle rung of higher education, or who, for one reason or another, are prevented from going further for non-academic reasons (unfortunate as this may be). Their effectiveness depends on courses and curricula being organized in a form as appropriate to the relevant demands of the labour market as to an introduction to further education. The basic link between the two functions is fundamentally the same as that between secondary general graduation and university admission requirements. The coverage and the emphases can be adjusted to meet both sets of requirements because in essence they do not conflict.

At the other end of the scale, the provision for and the use made of post-graduate study is far from adequate. The situation is illustrated by the following quantitative picture of situations on which data are available, although it must be remembered that, apart from research at the universities concerned, it is necessary to ascertain the total number of persons with research qualifications, including the students returning from post-graduate work abroad, about whom no adequate information is available.

The difficulty is threefold: many of the most able students prefer to go abroad and either obtain scholarships or proceed on their own; others choose or are obliged to take up more or less attractive employment opportunities; and some who are interested and have the ability to do post-graduate work cannot find the means to continue to support themselves through such further study. A partial solution to the first difficulty can be sought in improving the quality and reputation of the home universities. The second and third obstacles may be tackled by providing special support for post-graduate

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[1] And it might be interesting to contrast what the Russians manage to do in ten years of schooling (the extra year, added more recently, largely compensates for the time that is to be spent in manual work in factories or agriculture) not, as has been done, with the twelve to thirteen year schooling of the United States, the United Kingdom and the Continent of Europe, but with what happens in the thirteen years of Cambodia and Malaya, and the ten years of Burma and the Philippines.

Table 51. Percentages of post-graduate enrolments to total enrolments in certain South-East Asian universities

Country and institution	Total enrolment in institution(s) concerned	Post-graduate enrolment in type of programme			Post-graduate percentage of total enrolment
		Master's and post-graduate diploma	Doctoral	Total	
Cambodia (1961/62)					
Royal Khmer University, Faculty of Law	193[1]	—	7	7	3.7
Malaya (1961/62)					
University of Malaya	1 010	18	10	28	2.7
Philippines (1960/61)					
University of the Philippines and seven State colleges	24 165	944	1[2]	945	3.9
Private universities and colleges	259 340	3 312	148	3 460	1.3
Singapore (1961/62)					
University of Singapore, Faculty of Science	275	29	4	33	12.0
Thailand (1961/62)[3]					
Chulalongkorn University	6 049	—— 138 ——		138	2.3
Viet-Nam (1963/64)					
University of Saigon					
Faculty of Letters	4 314	—— 35 ——		35	0.8
Faculty of Law	4 103[1]	—— 135 ——		135	3.3

1. These figures do not include the secondary-level enrolments in the *capacité en droit.*
2. Between 1960/61 and 1962/63 the University of the Philippines awarded a total of only five doctorates.
3. In 1962 all the five Thai universities together awarded a total of 101 master's degrees and only two doctorates.

students and offering the holder of post-graduate qualifications significantly better employment opportunities. On the first count the universities of Malaya and Singapore have instituted a system of recruiting promising young graduates as part-time instructors who devote the rest of their time to post-graduate study and research. Dr. Sreenivasan, vice-chancellor of the University of Singapore in 1961, said: 'This we consider one of the most effective means of encouraging promising candidates to stay on in the university and continue their academic studies, otherwise the tendency is to go out to earn a living in which case we can never produce the future teachers and research workers of the university.'[1] In the Philippines the Science Talent Search Programme of the National Science Development Board offers financial grants for scientific research at the universities.

In considering the provision of facilities, however, it must also be remembered that, particularly in the scientific fields, there are major obstacles to be overcome in the form of shortage of staff qualified to undertake and guide research, insufficient financial support, and inadequate equipment and materials for laboratories. It is clearly important to give high priority to overcoming these difficulties; and there is much that could be done by manufacturing the simpler items of scientific equipment within the country or the region, as well as removing tariff and other restrictions on the import of others that are required for educational and research purposes.[2]

In the process of organizing courses and curricula at three levels of higher education, the question of the degree of specialization to be arranged in an appropriate order of progression, and how this is to be co-ordinated with the requirements of an over-all education, again arises. Even in its terminal aspect, a case could be made for designing the diploma to provide for a general competence in one or another main field which is sharpened into specific competence by guidance and training on the job; but if it is considered desirable—particularly where it is difficult to organize such supervision and training—that diploma holders should have completed some form and stage of specialization, it should not be too difficult to make provision for this without distorting the education of those who do go on to take a degree, so long as some compensation for this early specialization is made by reintroducing certain courses with a basic and broad subject sweep at a high level in the remaining period of study to a first degree. There is, indeed, probably some advantage in such alternation between specialized and general study which the smooth progress from general foundation to specialization, with its own undoubted set of advantages, may not always have. It is interesting to note that in the last two decades some educationists have come to the conclusion that to be successful general education is not only required at the preliminary stages of higher education, but also at a high intellectual level in its final stages. For instance, Professor Fueter writes:

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[1] B. R. Sreenivasan, 'Provision for science education at university level', *Regional Meeting on the Teaching of Basic Sciences in Universities of South and East Asia*, p. 8 (Manila, Unesco, 1961).

[2] See *Agreement on the Importation of Educational, Scientific and Cultural Materials: a Guide to its Operation*, second edition (Paris, Unesco, 1958). The agreement was adopted by the General Conference at its fifth session, Florence, July 1950, but so far only a few countries have ratified it.

'It is only the university student with his greater maturity, who is in a position really to understand a series of basic problems of science and social life. Thus, recently, there has been an increasing tendency to organize small groups during the final semester, for courses and seminars on general basic problems of research, the purpose of academic study, the history of knowledge and of social patterns, thus endeavouring to achieve a modest form of the ideal academy of Plato.

'The ideal, as many thinkers on the subject feel, would be to create conditions under which, in a final and particularly significant stage of their studies, doctoral candidates in their last semester are brought together with their professor, or some one of his assistants, for discussions co-ordinating their general study with some fundamental problem of academic or scientific education. Now that, for instance, the progress of nuclear physics has turned the question of the meaning and responsibility of research into a crucial problem of life, the educational opportunity of the last semester has become particularly vital; on the other hand; the rapidly developing methodology of specialization frequently also makes a re-examination of the conditions and requirements of the completion of higher studies necessary and useful.'[1]

Nevertheless, the issue does arise again at the first-degree level. The case for general education has been made; but there still remains the question as to what extent curricula should concentrate on honours or specialization in one or two subjects. That there are some jobs as well as temperaments to which such specialization is suited is evident; it is, however, equally clear that, particularly in a developing country, with its limited number of the highly educated and its rapid technological change and innovation, there is also a great need for the adaptive generalist. Both opportunities must therefore be provided for and the mix, in terms of curricular emphasis as well as enrolments, should depend on the particular social as well as economic requirements for national development in individual countries. It is, however, to be welcomed that there seems to be a general trend to avoid an overemphasis on specialization. There is a definite new stress on general education in Indonesia, the Philippines and Thailand, and Malaya has followed the change in its British model by introducing honours as a mark of distinction in general arts courses too, though a final year of specialization for honours in science is retained. Only Burma seems to be moving toward a concentration on vocational specialization: 'The "open" system used in the university, where numerous subjects, many of them of no use whatsoever

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1. Eduard Fueter, 'Professional training and general education', *The University Today, its Role and Place in Society*, p. 19-20 (Geneva, WUS, 1960).

to the country's development, were left for the student to choose at random, was more of a detriment than a boon.... But all this has been changed.'[1] The Robbins Committee Report put the basic issue succinctly: 'In a period of rapidly changing knowledge there is undeniably a tendency to add new knowledge year by year to an already full curriculum. It is easier to add than to take away. It is difficult to reach agreement as to where to impart less knowledge and where to concentrate more on principles. Especially where an element of professional preparation is involved, the pressure is all the other way. This is a danger to which the University Grants Committee drew attention in its report for 1947-52, and again, at greater length, in its report for 1952-57. It remains a real one. The essential aim of a first-degree course should be to teach the student how to think. In so far as he is under such pressure to acquire detailed knowledge that this aim is not fulfilled, so far the course fails of its purpose.'[2]

But while due weight is given to this opinion, two other points must also be borne in mind. In countries where the first degree is awarded after four to five years of study, following a schooling of twelve to thirteen years, the courses for this degree must include adequate opportunities for specialization as well as training in an understanding of basic principles and the capacity to think clearly. In others, where it may involve only three to four years of study—and in particular in Burma and the Philippines where the four-year study follows only ten years of schooling—it becomes, as the Robbins Committee also stressed, all the more important to develop post-graduate study. In so far as at the first-degree level the emphasis is on general education rather than specialization, it must be counterbalanced by adequate provision at the post-graduate level.[3]

Finally, the organization of curricula provides a range of possibilities from the completely free study of the traditional Continental system—though the French pattern with its certificate requirements is already not quite as free as the Dutch, German and Italian systems—through the traditional prescribed British university curricula, controlled attendance in term, terminal and annual examinations, to the intermediate American credit or unit system, combining great flexibility with controlled study. Each, of course, has its own virtues, but some one or another variant of the American system appears to be gaining ground in the region: even the University of Malaya has recently adopted a system of units in reorganizing the curricular requirements of the Arts Faculty. There appear to be good reasons why the adaptation of such a system may be appropriate in the countries of the region—provided that sufficient care is taken to avoid its pitfalls—particularly an overwhelming proliferation of courses (as has happened in the Philippines) and a packaged, piecemeal form of instruction and learning.

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[1] *The Working People's Daily*, supplement on University Education (Rangoon, 2 November 1964).

[2] *Higher Education, Report*, op. cit., p. 89-90.

[3] The difficulty and requirement does not arise to the same extent in professional courses like law and medicine which, spread over a long total period of study, have general prerequisites to be fulfilled before specialization.

The essence of the unit or credit system is that it aims at assuring adequate coverage of the main subject or subjects taken up for a degree by subdividing these into progressively more advanced courses, each of which is assigned a unit value in terms of its weekly hours of instruction and practical work,[1] and is terminated in an examination and/or other tests of proficiency. Of these a certain number, expressed in terms of units, must be taken and satisfactorily completed in order to qualify for a degree. Some courses are compulsory and must be taken by all students in a particular discipline, others are elective to a varying extent, but certain advanced courses can normally be taken only after completing less advanced preliminary courses. Generally, full-time students must take a minimum number of units for each semester or term, and there is also an upper limit to this: but there is the possibility (a) of allowing part-time students to proceed at their own pace—taking possibly two-thirds or half of the normal load; (b) of giving exceptional students the opportunity of completing their studies in less than the usual time, by accepting an additional semester load and, perhaps, by permitting study through a special term during the normal vacation period; and (c) of generally accelerating the usual period of required or habitual study by increasing the number of working weeks and minimum acceptable load in the semester. The first is of special help to those students who, without financial assistance, are obliged to work part-time in order to meet study expenses: whereas they are greatly handicapped by a system which requires full-time attendance throughout the academic year and the passing of comprehensive examinations at the end of each year.

Similar opportunities also exist, of course, with the French *certificat* or the Dutch 'free-study' system, but here all control over a steady rate of progress coupled with interim assessments and tests is lost. Indonesia, for instance, before introducing its system of 'guided study' with associated unit requirements and tests, had found that the habitual study period tended to be too protracted: since the introduction of the new system, the length of medical studies has been reduced from seven to six years and engineering from five to four or four and a half years. In Viet-Nam, similar difficulties have been encountered in the Arts and Science Faculties of the University of Saigon: and proposals have been made to control attendance at lectures, practical work, and examinations, as well as to increase the working duration of the academic year.

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[1] For instance: at the University of the Philippines, a science course of three units usually consists of 1.5 hours of lecture and 4.5 hours of practical work per week, amounting to a total of about 25 hours of lecture and 75 hours of practical work per semester, and a B.Sc. degree requires a minimum of 134 units; at Chulalongkorn University, in the Science Faculty, four credits are awarded for three hours of lecture and three hours of laboratory work per week per semester; and over a five-year course toward a B.Sc. a minimum of 166 to 172 credits, including electives in general education and a foreign language, must be secured, involving a weekly formal instruction load of about 25 hours.

The main advantage of both the British and Continental systems is that, in the first case, the system obliges and, in the second, encourages students and teachers to organize study and instruction with a broad year-round perspective, in which investigations, teaching and reading may develop as points of special interest arise, unlimited by the specific targets of particular course requirements. Furthermore, comprehensive examinations, at their best, may be considered more effective and informative than a series of examinations for separate courses. Nevertheless, as has been amply shown by the more highly reputed American universities, particularly in their graduate work, it is possible to design courses and curricular requirements in such a way as to assure flexibility in acquiring proper perspectives of the subject. Even here, as in the case of other systems, the quality of the teacher and the teaching remains a major factor in assessing the effectiveness of the method.

The unit system may also be coupled not only with comprehensive final degree examinations—as is not infrequently the case in the United States—but also with similar over-all examinations after the completion of certain sets of courses. Various administrative difficulties—including the reorganization of curricula and setting up appropriate machinery for different types of examinations—would be encountered; but once the system is in operation it should become much easier to make such modifications as may appear desirable in view of changing needs and resources, as well as of cumulative experience.

It is precisely because of the comparative ease with which, in the unit system, courses can be dropped or added, that there has been—particularly in the commercial universities of the Philippines, seeking to satisfy consumer demand—a tendency to introduce an increasing number of courses that are of little academic relevance and that unnecessarily burden already limited teaching and other educational resources. But the State institutions can resist responding to such fortuitous consumer demands, and government assistance can help private institutions to do so. It is equally essential to avoid duplication in cases where inter-departmental co-operation can produce a course that satisfies the need of two or more departments, so that each does not produce its own course with an insubstantial shift in orientation. This is particularly true of courses in general education, but it also applies to the so-called 'service' courses such as: (a) certain basic science teaching in the form of preparation either for an academic scientific career, or for medicine, engineering, or agriculture—where such institutions are part of a university; and (b) various other forms of specialized curricula, e.g., for geography or psychology when they are offered with somewhat different emphases in both science and arts faculties. But the basic goal, with its requirements of careful planning and continuous reassessment, remains that of organizing course requirements in such a way that compulsory and elective courses together form a coherent pattern, and enable the student to understand and gain competence over his subject as a whole. Furthermore, in order to meet variations of individual preference and temperament, it will not be enough to set up specific requirements; it will also be particularly important that student counselling includes adequate provision for advice and guidance in the selection of elective courses.

STUDENT WELFARE

The concept of student welfare is here used in its broadest sense to include both those non-academic facilities and factors that not only help a student to make the most of his opportunity to pursue higher studies—with a judicious combination of curricular work and extra-curricular activities[1]—but also those which reduce the restrictive influences of socio-economic conditions. Of course, with greatly limited resources cruel choices of relative emphasis again have to be made: for instance, the more that is done to provide residential facilities, the less there may be for financial aid to students or, perhaps, for the improvement of laboratories and their inadequate equipment; on the other hand, financial aid spread thinly to meet a variety of objectives is likely to be ineffectual. Thus the Economist Intelligence Unit, London, in its special study of 'Financial Aid to Students' in *Access to Higher Education,*[2] covering no less than fifty-one countries, concluded that if the objective were to encourage selected branches of study to meet manpower requirements '. . . it is probably necessary that aid should be available to at least 15 per cent of the students in the chosen faculties. We are not here making a judgement on whether it is justifiable to give an aid programme such a heavy bias, but are pointing out that a small programme can never have any real effect on the size of the student body; it can only influence the composition if it discriminates in some way'. The basic consideration throughout, then, must be that in selecting areas of action, programmes should be co-ordinated in such a way that they reinforce each other and produce better total results than might be expected from activities planned and operated in isolation.

FINANCIAL AID

Available data do not permit a clear comparison between the scope of the need and the provisions made for financial assistance. It is probable that whereas at least 25 per cent, and probably 40 per cent, of the actual student population would greatly benefit from aid, it is available, in general[1] to less than 10 per cent, and generally in inadequate amounts. The number of able students prevented from entering higher education owing to financial circumstances must be great indeed. Given the limited nature of available funds, how are they to be deployed to the greatest advantage, and how far do present tendencies seem to be moving in the right direction? Here it will be useful to consider the conclusions on general principles of aid contained in *Access to Higher Education*:[2]

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[1] Which in the constructive instance of contributing to the growth of a mature personality may perhaps be more appropriately termed co-curricular, to stress their complementary importance to academic pursuits.

[2] op. cit., p. 203.

'The decision on how much can be spent on aid, and thus how many students should be aided, is essentially a political one, depending on finance and on national priorities. Not until it is taken can it become clear which type of aid programme is most suitable. However, in view both of the limited funds available, and of the need to make the best possible use of those who complete their secondary education, it seems that few of the less-developed countries are in a position to run an equalization scheme. Almost invariably a seed bed[3] or a manpower[4] programme appears more suitable. Generally, the wealthier a country the more appropriate is an equalization scheme,[5] and the more likely it is that funds and facilities will be available to make it a useful one. While there is a case for a narrow equalization scheme in a poor country—assisting some particularly backward section of the community—a broad-based one can never be effective and is bound to be unjust unless substantial sums are spent on it.

'Bias in favour of certain courses of study is an essential part of almost any manpower or seed bed scheme. As a country becomes wealthier and the aid system progressively assumes the characteristics of an equalization programme this can be expected to disappear. Ideally, it should be decided which courses to encourage on the basis of nation-wide manpower studies, but the lack of these need not prevent a bias in favour of the selected subjects being built into the aid system; it is often obvious that a country needs more doctors or engineers. Generally speaking, the smaller an aid

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1. Malaysia is a special exception.
2. *Access to Higher Education*, Appendix C (contributed by the Economist Intelligence Unit), op. cit., p. 208-9.
3. A 'seed bed' scheme provides aid for a handful of students, the main purpose of which is to promote a rapid expansion in education at a later stage, particularly by assuring an adequate supply of teachers at higher as well as secondary levels.
4. A 'manpower scheme' aims at providing 'aid to meet a country's requirements for various types of skilled manpower—other than educators. Logically, such schemes should succeed seed bed ones when the latter have been in operation for a few years. . . . However, the pressure for more education is such that the two schemes often co-exist, the first soon merging into the second. Indeed, countries attempting to establish planned economies often set up a manpower-based scheme as their first aid venture.' (ibid., p. 186.)
5. 'The basis of an "equalization scheme" is a levelling up of educational opportunities. It aims to ensure that no student, or more frequently no able student, is prevented by financial need from continuing his education. Manpower and even seed bed schemes may contain an element of equalization, but it is of secondary importance.' (ibid., p. 187.)

scheme in relation to the student body, the narrower the specializations in favour of which a bias has to be established, if the system is to be effective.

'The more unified a scheme is, the more useful it normally proves. There is a good case for setting up as centralized an aid system as is compatible with economical administration. Seed bed and manpower schemes in particular are best administered by a special aid agency independent of the ministry of education, and of the universities. To check bureaucracy and to ensure that aid gets the attention and public interest which it deserves, parliamentary control of the aid agency may be advisable. This arrangement also helps to ensure that the amount spent on aid strikes a reasonable balance between the need for aid and all the other demands on government funds; student aid is very liable to be treated as a poor relation by financial authorities. Alternatively, the financial independence of the aid system can be secured by laying down inflexible regulations for the granting of aid—expenditure on aid being determined, for instance, by how many students reach a fixed academic standard.

'In general, it seems that selection for a really small aid scheme should be based entirely, or at any rate predominantly, on academic achievement. As it becomes possible to expand the scale of aid and as the scheme moves from the seed bed or manpower category to the equalization one, financial need should play an ever-increasing role in selection until eventually all those gaining admission to higher education should be able to get aid if they need it—and perhaps even if they do not.

'Though the progress of an aid scheme should be checked regularly, probably once a year, a careful evaluation of its successes and failings, though essential if the system is to retain any direction and purpose, need only be made every few years. Both require adequate statistical records. These should include, if possible, information for each level of education and for each type of educational establishment on: total expenditure, numbers of students aided (and thus how much each received on average), the proportion of all students aided, the proportion of students aided by course of study, and, if possible, a comparison of the academic performances of aided and of unaided students. Such comprehensive records may be ambitious for a poor country whose aid or general educational authorities have few trained personnel at their disposal, and many needs to be met. However, aid schemes cannot be expected to promote a country's educational, economic, or social development efficiently if, as at present, no basis for their assessment and evaluation exists.'

One point here needs an additional stress. Recognizing the possible, though not necessary, distinction between academic achievement and promise, it is doubtful whether it would be wise to ignore provisions to discover the latter; and also since either or both may be present in poor, middle-income, or wealthy families, the supply of aid needs to be tailored to recruit the best available talent from wherever it may be found. Indeed, this requirement is so great that its fulfilment should not only be seen within the context of the aid allocation determined by policy, but should in its turn influence the policy itself, for its economic as well as social impacts, while difficult to predict in precise quantitative terms, are nevertheless quite obviously great. At a particular point of early development, a nation may quite possibly recruit all the number and quality of high-level manpower it needs from a small sector of its people; but if it persists in doing so for any length of time, it is heading for disaster.

In the framework of the slim provision of financial assistance to students, it is to be noted that in Burma, Indonesia and Viet-Nam special emphasis has been given to concentrating much of this aid in certain disciplines, carefully selecting candidates on the basis of competitive examinations and bonding them for minimum periods of government service, ranging from three to ten years. In Burma the concentration, at least until recently, was on agriculture and forestry. In Viet-Nam, all students of the faculties of pedagogy receive full stipends, whereas in the other faculties no more than 4 per cent of the students obtain any support. (The percentage is somewhat higher in the National Centres of Technology and of Administration.)

Indonesia presents an interesting contrast with Malaysia. Less than 10 per cent of students in Indonesian State universities receive aid, but since 1963/64 tuition fees have been abolished and assistance is slanted in the following order by subjects of study: 55 per cent for medicine, agriculture and engineering; 23 per cent for education; and 22 per cent in all other art subjects. In Malaysia, some 30 to 40 per cent of the students (almost all Malays) receive assistance from the State and private sources, while, on the other hand, fees remain quite substantial; but aid is slanted more towards encouraging Malays to enter higher education than towards subjects of particular importance to the economy—of first-year students receiving aid in recent years, 78 per cent read arts subjects, 11 per cent science and engineering, 8 per cent medicine, and 3 per cent agriculture. Furthermore, an examination of the ethnic composition of the enrolments shows that most of the Malays are concentrated in the arts field, anticipating government appointments as well as receiving government assistance, while Chinese and Indian students converge on the scientific, technical and professional fields. The preferential system[1] has been defeating its own purposes since its inception, as opportunities involving individual initiative, crucial in a system of free enterprise like Malaya, continue to be neglected by Malays in their choice of higher studies.

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[1] 'The Yang di-Pertuan Agong shall exercise his functions under this Constitution and federal law in such manner as may be necessary to safeguard the special position of the Malays and to ensure the reservation for Malays of such proportion as he may deem reasonable of positions in the public service (other than the public service of a State) and of scholarships, exhibitions and other similar educational or training privileges....' *Malayan Constitutional Documents*, Vol. I: *The Federal Constitution*, Part XII, Article 153(2), p. 117 (Federation of Malaya, Government Printer, 1962).

In the Philippines, about 25 per cent of the students of the University of the Philippines receive some form of aid, largely in terms of the remission of fees and full or partially free board and lodging, and considerable assistance is also provided in the other State institutions, but for the large body of students in the private universities and colleges only a negligible number of privately endowed scholarships are available. The poorer student must, by and large, depend on earning his way through college[1]—and about 60 per cent are estimated to be doing so.

In general there is no co-ordination between the programmes of different sources of aid—which in Indonesia and Malaysia include local authorities assisting students from their areas as well as various institutional and private sources—and the scarcity of any comprehensive data and analysis is indicative of the fact that the subject has received far from adequate consideration. It is therefore all the more essential that studies be carried out to facilitate policy decisions and subsequent programming.

In order to be effective as well as just, the more limited the finances for aid programmes are, the more essential it is to adopt clear and workable priorities on who should be aided, on what conditions, in what form, and at what stage. Thus the more that inequitable restrictions (e.g., the availability of scholarships in science or agriculture but not in arts or law, which limits the study of the latter subjects to the well-to-do) and selection difficulties (e.g., the more the degree of need enters into the picture, the more difficult it becomes to achieve a fair application of criteria) are in evidence, it is important to increase financial allocations significantly. But in the foreseeable future the relative paucity of funds is likely to be such that, since full individual justice cannot be achieved in any case, it may still be right to give priority to national needs, even if this means that certain types of talent and temperament are given preference over others which, in their own way, are equally excellent and equally in need of support.

High ability that is in need of financial assistance is certainly the first criterion to be satisfied, but to this the following further considerations must be added: the need to increase recruitment to less popular but essential disciplines; a possible need to raise the socio-economic level of particular geographical or ethnic sectors of the population, which may otherwise become comparatively poorer as others grow richer; and the need to assure future personnel for work in geographically unpopular areas.

This last issue immediately brings up the question of the conditions under which aid is to be made available; for the simple provision of aid in particular disciplines oriented to students coming from certain ethnic or geographical sectors does not in itself guarantee that they will be prepared to go back and work in these sectors. Bonding for service in the field for specified periods is practised, to varying extents, though not consistently, in all countries, particularly in such fields as teacher training,[1] medicine and agriculture. Indonesia has perhaps—in principle at least—gone farthest in resolving the ethical problem of why economic need should oblige a student thus receiving aid for his study to render services to the country when more fortunately placed students can easily avoid this, to their considerable financial advantage. Starting with compulsory service placement for a minimum of five years for medical graduates, Law No. 8 of 1961 requires all graduates (*sardjana*) to register for service to the nation for a minimum of three years. Thus bonding is tied to the general privilege of higher education rather than to scholarships.

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[1] Some of the colleges provide part-time-work opportunities on the campus.

There is also the presently limited but significantly extensible system of bonded financial aid from private industry and business for entrance to particular fields of technical-vocational education and training. Since this is essentially a contract resting on mutual interest and consent, no moral issues arise, except in so far as if a student accepting such aid wishes to contract out, he should have the opportunity to pay back the assistance received over a reasonable period of time. But more important from the present viewpoint is the fact that even an expanded system of such aid and bonding, while perhaps promoting training and recruitment for certain important industrial and business sectors, would not help to meet the high-level manpower needs of rural and backward areas.

In both cases the main practical problem of bonding, apart from the administrative difficulties of effective implementation, is that it tends to defeat its own purpose. The requirement for graduates to work at occupations and in places where lack of interest, sympathy and incentive causes them to function without energy or initiative can scarcely be conducive to development. Of course, if such positions were to be made attractive through present advantages and future opportunities there might well be no need for bonding. Yet, both to overcome initial reluctance and to assure an adequate supply of planned manpower in such fields as education, agricultural extension, public works and health, it may be desirable to adopt a middle path—that is, to combine bonding with effective incentives, particularly through examples of the rapid advancement of outstanding bonded graduates. There is, in view of both national development needs and the growth of individual ability and character much to be said in favour of making advancement to various government positions in the national and provincial capitals and in other major towns contingent on a substantial period of work in the field.

While it is clearly desirable that all aided students should maintain high minimum standards to continue to receive such aid, and mistakes in selection must be rectified on the basis of subsequent academic performance, it is equally evident that the procedures for assessment should be flexible and not build up emotional pressures which may harm the sensitive student, and those who, even with aid, are materially handicapped in their studies, through poor living conditions, the inadequate provision of textbooks and other educational materials, and who still have to supplement their income by part-time work.

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[1] For example all teacher trainees at the third level in Viet-Nam receive scholarships and are bonded.

There is, in some cases, the possibility of tying aid to the performance of certain extra-curricular duties that are in the general interest of the academic community or which help to widen the scope of assistance to other needy students and provide experiences for the recipient which instead of interfering with his studies help him to develop valuable qualities of personality, co-operation and responsibility. If these conditions are satisfied, it is not possible to say that unfair advantage is being taken of lack of means; he is rather being asked that, in view of his greater ability, he should help to perform tasks which would have a multiplier effect on the greater investment made in his education, so that others in need of assistance but not receiving it may also benefit. Such 'service scholarships' are far from uncommon even in the wealthy United States.[1] The type of work students may be required to do in this way could extend from part-time administrative duties in university co-operatives (e.g., hostels, canteens, stores, book-banks, and duplicating projects to supplement the shortage of adequate textual material, particularly in the national medium of instruction) to, at higher graduate levels, offering appropriate assistance to professors, lecturers, and librarians.

The form in which aid may be provided varies from full scholarships and/or bursaries, through partial ones—including provision in kind, by remission of fees, free or partially free board and lodging, and free or subsidized textbooks and other educational materials—to long- and short-term loans. The Economist Intelligence Unit[2] rather sweepingly concludes that the possible financial advantage of loans is offset by the complexity of their administration and the cost this involves, particularly when combined with problems of their non-repayment. The experience gained in this field—in particular by Germany and Sweden, where sizable loan schemes have operated very successfully—appears to have been ignored. Direct and full aid is undoubtedly better; but where finances are severely restricted, difficulties of administration should not be allowed to imperil opportunities of making the most of the total volume of assistance. An alternative to this, which, apart from voluntary alumni contributions, has apparently not been practised, is to require all graduates to contribute a reasonable percentage of their salaries over, say, the first three to five years of their employment to a national scholarship fund. Such a system is based on a principle of comradeship by which those who have been helped in the past, when they are in a position to do so, make it possible for others to be assisted. This may be considered a special tax on those who have secured the privilege of higher education, which is justified so long as socio-economic conditions for entry to higher education are not justly equalized.

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[1] See *American Universities and Colleges, 1960*, eighth edition, p. 37 (Washington, D.C., American Council on Education, 1960).

[2] *Access to Higher Education*, op. cit., p. 196.

Finally, on the question of at what stage limited aid should be concentrated the answer is perhaps as much a matter of balance as of concentration. It may be given at one or more of the following levels: (a) on entrance; (b) after passing the first year of higher education; (c) during the final stages of the first degree; and (d) for post-graduate work. While assistance at entrance is essential for equalization purposes, it must obviously take second place to both (b) and (c); for there is no point in assuring admission, if one allows drop-outs for economic reasons at higher levels. Secondly, (c) should obviously receive first priority in the sense that only when it is certain that no final-stage student is obliged to discontinue studies for economic reasons should aid be given at other levels. Apart from questions of equity, the senior student represents an individual in whom a substantial investment has already been made, and at this stage, more than any other, it is important that he should be able to concentrate on his studies without distractions. Delaying aid until after the first year will reduce administrative complexity as well as cost and the possibility of error in evaluating talent; on the other hand, such a delay must inevitably mean the exclusion of many poor but able students. Where it is adopted as a policy, adequate compensation needs to be made in the form of loans or part-time work opportunities preceding the allocation of scholarships or bursaries. Assistance at the post-graduate stage assumes special importance in the region, as the research field of higher education is in need of considerable development. The system of graduate and research assistants adopted in Malaysia, which is really a special form of service scholarships or fellowships, is of particular interest since it also helps to reduce university staffing problems as well as over-all costs.

It is clearly most desirable that there should be some kind of co-ordinating agency for all these closely related forms of student aid, preferably at the national level; but where this is not possible, a nationally decentralized system would, at least in matters of policy, ensure an adequate interchange of experience and views. To the extent that (apart from quite definite departmental training needs), the student aid programmes of different agencies and institutions remain unco-ordinated, none will be in a position to achieve its maximum potential.

RESIDENTIAL FACILITIES

The provision of residential facilities must be viewed from an educational as well as an economic aspect. On the first count there is some difference of opinion: there are those who believe, particularly in the United Kingdom and those influenced by its residential system, that living in a close-knit academic community has a unique educational value. There are others who feel that the scholar, instead of living in a comparatively closed community, should share his life with those who, working manually as well as clerically and intellectually, form the wider society which it is the duty of the university to serve. It is, of course, possible to combine the two attitudes to some extent in metropolitan universities by providing common housing for students and young workers. But except for such more prosperous developing countries as Malaysia and Ceylon that can, for the time being, afford to provide primarily residential universities, the problem is basically economic rather than ideological. Whatever educational value residence may have, it can hardly be considered to compensate for inadequate laboratories, libraries, and other academic provision.

As the solution to an economic problem, the provision of residence must take its relative place with other forms of aid and be designed in a form that facilitates adequate and just access to higher education, while of course also paying due regard to educational functions, which may, however, be well served by such other amenities as university centres, clubs, enhanced library facilities, canteens, and reading, study and recreation rooms. These together can well be less costly than the provision of bed-sitting units for groups of two to three students: the cost of individual accommodation for anywhere from 25 to 50 per cent of the student body is surely quite prohibitive. Provided that there are adequate out-of-class facilities for study as well as for recreation on the campus, the main task is to make sure that the student is adequately fed and has a reasonable place in which to sleep, which, under conditions of austerity need be no more than a bunk in a dormitory—there is, for example, no evidence to show that when, due to the influx of veterans to higher education in the United States in the immediate post-war period, many students lived in barrack-like dormitories, with tiers of two to three bunks, there was any fall in academic standards.

Meanwhile, in addition to building appropriate university housing units, particularly for out-of-town students[1] and others who are for one reason or another unable to live with their families, full use needs to be made of the normal housing facilities of the town, as indeed Oxford or Cambridge also do through their university licensed lodging services, or the University of Sussex in filling the boarding houses of Brighton, empty in the off-season period of term time. Even more could be done through university-supported and supervised co-operative student housing in rented buildings. In Burma the universities provide hostel accommodation, though this is very overcrowded, for nearly 50 per cent of the students; in Malaysia the two State universities nearly 60 per cent, with Nanyang going as high as 90 per cent; in Thailand the two new university centres at Chiengmai and Khonkaen are planned on a residential basis to avoid the student accommodation problem which has increased steadily with out-of-town enrolments in the five Bangkok

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[1] Particularly women students.

TABLE 52. Student lodging in three university centres of Indonesia: percentages of enrolment by category of accommodation[1]

University centre	In hostels	In private boarding houses	With relatives or other families	Other arrangements
	%	%	%	%
Djakarta	15	25	55	5
Jogjakarta	25	50	20	5
Surabaja	10	35	30	25

[1] Abstracted from S. Chithamparanathan, *WUS and Higher Education in Southeast Asia*, p. 54 (Geneva, WUS, 1963).

universities. In the Philippines and Viet-Nam, with certain exceptions,[1] students are largely left to their own devices. It is mainly in Indonesia that considerable use of private lodging facilities has been made in an organized form with university support, though only occasionally on a co-operative rather than on a contractual basis between university and private owner. Thus in 1959/60 students in the three university centres of Djakarta, Jogjakarta, and Surabaja were estimated to be living under three main types of arrangements in the proportions shown in Table 52. The main consideration here is the extent to which it has been possible to assist students in finding private lodgings in cities suffering from overcrowding. Clearly, similar opportunities should be available in other countries, often in less crowded cities and towns.

In so far as specific student accommodation is available, a number of practical considerations should be borne in mind. (a) The hostel unit should belong to a larger complex, so that certain facilities, including canteens, reading-room and recreation centres, can be provided on a large-scale basis, reducing per student costs. (b) To achieve the objective of an academic spirit of community, two conditions in particular should be satisfied: there should, as in Malaysia, be an adequate number of resident and associate tutors, so that, at least in principle, there is a proper opportunity for students and staff to encounter each other in daily life; and there should, wherever possible, be an intermixture of students from different faculties, as well as levels of education, to promote both contact between different disciplines and different stages of academic maturity and experience. Interdisciplinary co-operation is difficult enough to realize, and nonsense is made of its objectives if full advantage is not taken of such situations as the organization of residential arrangements. To the extent that local authorities and special private groups are interested in providing accommodation and facilities for students from their areas of concern (as indeed they should be to supplement the national effort), it is obviously desirable that they should, rather than making separate arrangements, as so often happens, contribute to the common provision, on a practical quota. In this way, for so many units of financial contribution, a given number of residential places would be reserved for students from the group in which they are specially interested. The other alternative of making special provision for various geographical, ethnic, or religious groups is likely to advance unhealthy rivalry rather than a joint approach to common problems.

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[1] Particularly for the University of the Philippines, which provides hostel accommodation for about 30 per cent of its students.

HEALTH AND GUIDANCE

A new emphasis is being rightly laid on student health,[1] and upon guidance, both psychological and vocational. The transition from recognition in principle to operation in practice in many cases remains to be effected.

Student health

It is scarcely necessary to point out the necessity of protecting the investment in student education from the depredations of ill-health, physical and mental, both on the individual during his university career and subsequently, and also in its effects on those with whom he is in contact.

Here, while appropriate treatment facilities, including hospitalization and specialist attention, should not be neglected, the main emphasis must be on preventive measures to check the incidence of illness and to discover it, where it occurs, in its early stages. It is here that special university health services, as distinct from the general public provision, become most important to ensure regular health examinations, control of nutrition and sanitation in hostels and university canteens, inoculations for communicable diseases, the supervision of physical education and easy access to sympathetic medical and psychiatric advice.

The health service and its preventive function is of crucial importance to student mental health which, as shown by the report on *Student Health in Asia,*[2] has become an object of special concern: the conference 'noted that due to severe competition for seats in the universities and the tendency of a cramped course in universities, the degree of neurosis and anxiety states among students is on the increase. Mental health is a more urgent problem in Asian countries now than ever before.' The health service can do much to prevent serious mental disorders by providing both informal and formal lectures in mental hygiene and psychology, by making psychiatric attention available at early stages of mental distress and by working in collaboration with student guidance and counselling services, including the tutorial system, where these exist. Such a concerted approach to the problem can obviously be achieved only through co-ordinated facilities either within the university or organizationally linked to relevant specialist services outside it.

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[1] For a full discussion of the subject see:
Student Health in Asia, Report of the WUS Asia Conference of Experts on Student Health, Peradeniya, Ceylon, April 22-29, 1962 (Geneva, WUS, 1962).
Problems of Student Health in South-East Asia, Report of the WUS Experts' Conference in Singapore in 1951 (Geneva, WUS, 1952).

[2] op. cit., p. 100.

Guidance and counselling

Reference has already been made to the need for counselling where courses can be designed from a group of units: the need, whether for a 'moral tutor', a supervisor, or a counsellor extends in many cases far beyond the difficulties of unravelling a curriculum: to many who have passed through a university their most endearing memory is of their tutor.

The tutor who has charge of a small enough number of students to maintain genuine personal contact—either in sessions involving no more than four students or in availability for consultation and advice in all matters and problems of student life—is an ideal that even developed countries are either able or willing to make a reality only in a few instances. Nevertheless, while academic and personal tutorial relationships must be attenuated owing to a low student/teacher ratio, they can still have a significant influence, at least in the case of able and dedicated teachers: a few apt and sympathetic words can, at the right moment of either emotional or academic bewilderment, transfigure the outlook of a student.[1]

Where continuous student/teacher relationships cannot be adequately developed, it becomes all the more important to provide some more generalized but nevertheless efficient means of guidance and counselling at various stages and in different forms. This is being increasingly realized in the region: Burma has experimented with various kinds of tutorial assistance to students; Indonesia includes a form of continuous academic tutorial influence in its new system of guided studies; Thailand has been considering the establishment of a centralized student guidance agency in Bangkok, and the Philippine universities and colleges frequently have a guidance and counselling service on the American pattern.

In assessing future development and organization along these lines, the following main sectors of guidance may be recognized:

1. Guidance at the time of admission in choice of subject(s) and curriculum.
2. Counselling during the course of studies; (a) on academic matters, including possible changes in the original choice of subject(s); (b) on personal conduct and problems.
3. Advice and placement services for students about to graduate.

For all three functions experiments with various types of personality and aptitude tests might well be undertaken, and cumulative student records devised and maintained through collaboration between the counselling agency, the health service and the department of psychology.

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[1] Further comments on the tutorial system will be found in Chapter 11, p. 390.

Individually, in the first two sectors university teachers could also be assisted by carefully selected senior students working under their guidance and supervision. There has actually been some use made of graduate students for such purposes, particularly in hostels; but not in any very systematic way, and there is again considerable scope for experiment and study.

Finally, for placement services, the administrative machinery of the university should also be involved through the operations of an appointments board in maintaining relevant contact with both the private and public sectors of the economy. Apart from thus assisting individual graduates, the service could evidently also help in dealing with the problem of a more adequate economic distribution of graduates through rational advice and persuasion.

STUDENT ACTIVITIES

There are various types of student activity that, though interrelated, should be clearly distinguished—if for no other reason than that they raise quite different kinds of problems for the university administrator, though perhaps not quite so markedly for the university teacher. First, there are those that are a proper supplement to the curriculum, without which all general education becomes meaningless—i.e., those manifested in the liveliness of various societies and clubs; in dramatic, literary, art and musical associations, performances, exhibitions, and debates. Next is participation in the general organization and discipline of student activities through college, university and national unions. These two types of activities, and the preceding activities that may or may not be subsumed under them, exist in all countries of the region—though perhaps with more support both from teacher and administrator they could be somewhat more creative. The organization of national students' unions is not a universal practice: perhaps, in at least some cases, the reason for this relates to the third type of activity, the search for what the students, rightly or wrongly, consider their academic and individual rights, and the attempt to obtain the kind of administrative representation that would help to secure them. This leads to a desire to play, as students, a significant role in the political destiny of the nation. As might be expected, this results in a fertile area of dispute between student and administrator, within and outside the university, and there is little difference to be found in this respect between countries that have or do not have the more powerful pressure groups of national unions of students. It is also the area of relationships from which most problems of so-called student indiscipline arise. Finally, there are student activities designed to help meet the material needs of the university community on a co-operative basis and of the surrounding community at large through participation in extension services, about which enough has been said in Chapter 8. In these contexts it appears that further thought and study might be given to the following considerations.

First, in view of the educational importance of student cultural activities, it is doubtful whether at the moment either financial or technical support for them is sufficient to help them grow to be what they could be. It is possible that comparatively small investments here, in terms of genuine interest as well as finance and other supporting facilities, would reap far richer harvests than might be expected. These activities also provide one of the easiest and most fruitful opportunities for developing constructive personal relationships between students and teachers on a partially academic basis of which both could make the most for teaching and study purposes.

Second, while it is undoubtedly necessary to guard against the excesses of the immaturity of students, it is no solution to accept these when it suits the older generation as a means to a political end, or to reject them as a failure of training, when the end cannot be reconciled with the established point of view.

Internally, even in the mediaeval universities the students had quite as much to say about what they wished to learn as what the teachers proposed to teach. Today, too, there is an increasing tendency not only in the permissive educational system of the United States, but also particularly in the universities of the United Kingdom and the Federal Republic of Germany, to give a serious hearing to student views on the educational process. The mechanism elaborated or chosen to achieve mutual trust is not important—but to ignore student opinion is asking for trouble, and deserving it. In Asia, wherever an administration has chosen to ride roughshod over student opinion, without allowing it an opportunity to voice its views, the administration has either been obliged to beat an undignified retreat or to resort to quite totalitarian measures, of which the final results still remain to be assessed. The conclusion is inescapable that a willingness to give sympathetic attention to student views will increase rather than reduce the possibility of a rational solution.

Externally, the problem is somewhat more complicated, but in essence it is the same. No matter how desirable it may be that students should not, apart from their academic environment and interests, engage in political activity, nothing will be achieved by telling them that they may not do so, even in the most substantially supported of categorical terms. For, as has again and again been shown in Asia, such a measure can only achieve a temporary quiescence whilst a far more explosive situation is generated. Solutions must again be sought by taking young men and women seriously, and in providing adequate safety valves for their still immature but powerful emotions. For this, again, it is not enough to give them an appearance of a hearing; they are too old for that. Authority must find ways of taking them into its confidence, listening to them, and accepting sense without rancour, while also standing firm in the rejection of nonsense.

Finally, co-operation is an area of activity to which repeated references have been made in this chapter, and one in which isolated experiences within the region, as well as post-war experiments in Europe, show that the enterprise of the university community can do much to help its manifold material needs. But even if one chooses to ignore the fact that, for instance, the student co-operative canteen at the Santo Tomas University in the Philippines, the textbook publishing centre at Jogjakarta in Indonesia and the educational materials and general store at Thammasat University in Thailand give far better value for each unit of currency than any commercial store, there is still the consideration that the co-operative effort involved in the academic community trying to meet its own material difficulties would render a major educational service in enhancing a sense of responsibility, bringing students, teachers and administrators together in a common tangible effort,[1] and channelling energy into productive causes. In short, the community in organizing to help itself can also become more of a community. Thus, inaugurating a WUS Asian Training Workshop on Co-operative Management at Bombay, in May 1964, Dr. Zakir Husain, an eminent educationist and Vice-President of India, had this to say: 'Co-operative enterprise is a middle way between the acquisitive profit economy and the totalitarian economy. It is, as I see it, one of the most important means of achieving decentralization of economic power and structuring an egalitarian society. . . . Its progress is demonstrably slackened by the dearth of dynamic leadership in adequate measure. If the emerging talent at the universities can be attracted to this fruitful social idea and if it gets opportunities of trying the idea out with success during its stay at the universities a great social need will be met. The students can by this method organize a more efficient and richer life for themselves at the universities and can make them the nurseries for the future leadership in co-operative effort of which all our countries are so obviously in need.'[2]

SPORT

This chapter has reached its conclusion with no reference to the pursuit of what the school curriculum calls organized games. The academic cliché of *mens sana in corpore sano* appears today to be not merely outworn, but untrue—the battle fields are becoming less dangerous than the playing fields. Is it too much to hope that the university student, not uninspired by his studies in philosophy, may one day again play games because he enjoys them, and thus help to place them in their real perspective as neither a sublimation of sex nor a form of international combat, but a pleasant if sometimes strenuous form of recreation?

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1. See *Co-operative Enterprise in the University Community*, report of the South-East Asian WUS Workshop Conference on this subject, December 1958-January 1959, Madras, India.
2. Zakir Husain, 'The aims and methods of WUS', *WUS in Action*, Vol. XIV, No. 6, p. 7 (Geneva, World University Service, 1964).

11. Teachers, teaching and research

A study of the contribution of higher education to social and economic development must necessarily concentrate on utilitarian themes—professional training, applied research, the propagation of a national language, the contribution to national planning, the direction of extramural studies, and features of administration such as admission policy and wastage rates. Accordingly, while quality has been emphasized throughout the report, and cultural considerations have been far from neglected (e.g., Chapter 8), these values have been assessed more in relation to social demands and the university's contribution towards meeting them than in terms of intrinsic and final values for the university and for the individual component of its community of scholars.

It is in turning towards the problems of staff and teaching, dependent upon administration policy though these are, that the humanist concept of *universitas* may receive more specific attention.

The position has been admirably summarized by a scholar of wide experience in the region and its universities:[1] 'There is nothing new in the tension between practical objectives, set forth by State or church, and the values developing among academic people from the nature of their work. Scholars have studied from a love of learning and been trained for practical objectives from the beginning of universities. This profitable tension has continually modified both the learning and the practical objectives. The qualities and practices which are esteemed have always been influenced both by the tasks which learned men were intended to perform and by the methods of selection and training developed to ensure good performance.'

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[1] T. H. Silcock, *South-East Asian University*, p. 3 (Durham, North Carolina, Duke University Press, 1964). This analysis of the problems caused by the Western derivation and practices of South-East Asian universities contains two chapters of particular significance to this study—Chapter I on 'Academic values and the role of the university', and Chapter IV on 'Staff, students and teaching', as well as others on history, on finance and on government, language, and research.

The spirit of a university is to be found in its teachers and its traditions, and in the influence of these upon its students, both those past graduates who, now in positions of influence, are able to reflect its spirit and further its cause, and those who form the present student body.

The traditions of the universities of this region are either borrowed or in the process of establishment: the inheritance of Western traditions has resulted too often in the assumption of forms without a consideration of their relevance, in various inflexibilities ill-suited to satisfying the particular needs of an individual institution, and often in student/staff relationships based upon a fundamentally unrealistic understanding of the nature of a student population which is drawn, not from the high schools of the United States, or the grammar schools and lycées of Europe, but from the developing schools of emergent countries. The problems of student dissatisfaction and indiscipline which came to a head in India, in Burma, in South Korea and in Viet-Nam and which are latent through the region may be considered to lie partly in unsatisfactory selection procedures, certainly in a failure to recognize that the resentment of youth against a disciplined society is due to the failure to provide a full and satisfying life within the university at a time when the immediate future offers little but misgiving or apprehension. To a certain extent this is a material question of conditions of work, recreation and social amenities: to a far larger extent it is a reflection of the influence of the staff upon the student body.

This in fact results in the imposition of a tremendous strain upon university staff at the very time when staffing is in a most critical situation, since while on the one hand there is a constant demand for more staff with the expansion of university education, on the other hand the national desire for its universities to be staffed by its own nationals has resulted in a loss of many of the scholars responsible for establishing the initial standards and reputation of the university.

RECRUITMENT

In general terms this means that great care must be taken to recruit the best available teachers whilst developing the capacity of the university to recognize and train its future staff from its young graduates—a process which implies that university teaching can be made an acceptable career to such selected candidates in the face of major competition from external employing agencies, both in the public and in the private sectors.

This of course opens up the whole question of the salaries and terms of service of university teachers. Here it is easier to make generalizations than to deal in figures—there is, however, the consolation that the generalizations can be applied throughout the region, figures cannot.

In the first place the scale of salaries must bear a positive relationship to what may be considered commensurate posts outside the university field: the level normally accepted for such comparison is the graduate civil service. If, particularly at entry, there is disparity between the executive grade of the civil service and university teaching, the universities will face a handicap in recruitment from which they may never recover.

It may be considered that parity of scales is an over-simplification of a complicated situation—it is, for reasons which will be explained; but young men, however sophisticated, are more likely to be attracted or repelled by what they consider a salary than by an assessment of hidden emoluments.

The basic salary of the university teacher must appear at least as equally attractive as any other salary he is likely to command with his particular talents. It should be adequate to maintain without anxiety a comfortable standard of living which will permit easy social intercourse with colleagues, students and visitors to the university.

As will be seen, this apparently facile requirement is scarcely observed in the region. There are, however, a wide number of hidden emoluments or fringe benefits which it may be more appropriate, and possibly more expedient, to employ, in preference to becoming enmeshed in the endless repercussions of salary revision schemes, particularly if these involve an upward dislocation of one unit in a salaries complex: in these matters it is wise to fight for parity, but seldom rewarding to strive for superiority.

It would, however, seem desirable, within the closed community of the university, to battle for those communal or scholarly ancillary benefits which can do much to alleviate modest basic salaries: pension and provident funds, medical insurance schemes, family allowances, provided or subsidized living quarters, sabbatical leave, and assistance in the publication of studies and research.

With these conditions of service must be considered conditions of work: the provision of good libraries, laboratories and equipment, and adequate teaching accommodation. The work load must not impede research, and good work should be recognized by promotion in status.

Cumulatively it is essential, if the university is not to lose its standards, that these conditions should produce a surplus of candidates for vacant posts at all levels—unless appointment is by selection it is bound to be ineffective.

It is difficult to discover how far, and where within the region, such staffing situations obtain: the most ominous feature to be observed is the large proportion of part-time staff employed[1]—a measure which no doubt prompted Professor Silcock's very pertinent query: 'The first question we have to ask about South-East Asian universities is whether their character has so altered that they no longer are societies of learned men but organizations employing teachers.'[2]

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[1] Though in some fields, particularly technology and law, the use of part-time staff may be desirable as well as expedient.

[2] T. H. Silcock, op. cit., p. 95.

In Thailand, as everywhere except in Malaysia and the Philippines, all full-time university staff are civil servants—a dean ranks with an under-secretary in a ministry, a professor with a secretary-general—other posts are graded by academic qualification, and it takes about ten years of service for a B.A. to reach the point of entry on the salary scale of an M.A.

No information is available on university salaries in Burma subsequent to the November 1964 reorganization: previously parity with the Civil Service was maintained at the higher grades. There was, however, a wide difference between the salaries of professors and lecturers on the one hand and assistant lecturers and tutors or demonstrators on the other. It was not easy for university staff to earn supplementary incomes, but housing, though insufficient, was provided on the basis of 7.5 per cent of salary. The ratio of professors to lecturers to assistant lecturers was 1 : 3 : 5, but some 60 per cent of all staff were in the tutor/demonstrator category, with a very low salary and consequently a high turn-over.

In Malaysia salaries are comparatively attractive, cost of living allowances and family allowances are paid, and subsidized housing is made available at a very favourable rate.

The salary of a professor in Indonesia[1] is equated with that of a secretary-general of a ministry or of a governor of a province: this sounds quite satisfactory—almost lavish—but in fact it appears that no official is able to support himself on a basic salary frequently earned between 8 a.m. and 1 p.m., after which the serious business of the day begins. Official salaries, as is always the case, have lagged far behind the pressures of inflation. Housing, if available, which it seldom is, is provided at 10 per cent of salary. An attempt is made to supplement salaries by payments for additional teaching—a professor's load is approximately four hours per week—but the payment is almost nominal, and other additional activities are more profitable.

In the Philippines the standard of living expected of university staff is higher than the simple standards considered appropriate in Thailand and Indonesia, and in many of the private universities fees on an hourly basis replace salaries. The situation appears to be better at the State University of the Philippines where the *Far Eastern Economic Review* reports[2] that with recent increases the maximum salary for certain professors is $6,000 a year, and the average staff income about $1,500.[3] The fact that the article adds 'not at all bad for Asia' also provides a comment on university salaries throughout the region.

It has often been suggested that there is a considerable disproportion between the salaries of senior and junior staff, but an examination of the

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[1] This information was obtained in 1961—there is no evidence, however, of any major change in the situation.

[2] *Far Eastern Economic Review*, No. 12 of Volume XLV, 17 September 1964, p. 509.

[3] These figures are based on the latest exchange rate of approximately U.S. $1 = 4 pesos.

TABLE 53. University staff salaries: highest and lowest scale ratios

Country, and staff salary comparison	Ratio at minimum of scale	Ratio at maximum of scale
Burma		
Professor/tutor	5.0 : 1	4.7 : 1
Professor/assistant lecturer	3.0 : 1	2.0 : 1
Cambodia		
Professor/*chargé d'enseignement*	1.6 : 1	2.3 : 1
Indonesia		
Professor/assistant lecturer	2.3 : 1	1.4 : 1
Malaysia		
Professor/assistant lecturer	2.3 : 1	2.3 : 1
Philippines (University of the Philippines)		
Professor/instructor	2.3 : 1	3.0 : 1
Thailand		
Professor/assistant lecturer	3.0 : 1	2.0 : 1
Viet-Nam		
Professor/assistant[1]	3.2 : 1	3.3 : 1
Professor/lecturer	1.4 : 1	1.5 : 1

[1] Often a graduate student working for a higher degree.

ratios at minimum and maximum points for professors and instructors, assistant lecturers, tutors, demonstrators, or whatever may be the lowest rank, brings out the ratios shown in Table 53.

With the exception of the almost unbridgeable gulf between the top and the bottom of the hierarchy in Burma proportions are almost identical throughout the region save in Cambodia, where the salary differential is based upon qualification. The only inexplicable factor of irregularity is the expansion of the gap at the maxima in the cases of Cambodia and the Philippines. The ratios have been calculated on the most recent available data, which may even date back to 1961: however, adjustments are inevitably required to any published salary scales at any time.

Promotion is a factor of significance in incentives to recruitment. Where promotion depends upon seniority, as in Thailand, a number of well-qualified staff are likely to be found in the lower levels of staffing: they are also likely to be very mobile. In Burma, where lecturers are young and opportunities for promotion few, the passage from assistant lecturer or tutor to lecturer is extremely slow, and again there is a high turn-over among younger staff.

The disappearance of a large number of expatriate staff, whether on grounds of policy or for individual reasons, has allowed for a spate of promotions, and so have the inroads of administration and the diplomatic services in the newly independent countries, but the opportunities for promotion thus created are singular, and may well create false expectations of recurrent opportunities for advancement.

The political and social importance of local staff appointments is obvious—the sheer necessity of such appointments is becoming increasingly clear. The academic point of view could not be more forthrightly expressed than in the *Report of the Committee appointed to review the Policy of the University College of the West Indies* (p. 104):[1]

' "We fully acknowledge that in making its appointments a university or a university college must take account not only of the intellectual qualities of applicants; it must also take into account a number of imponderable personal qualities which are rightly judged to fit a man or a woman for an academic career. But it remains true that an appointing committee must look first and foremost to the vitality of the intellectual and scholarly gifts of applicants and to their power to provide intellectual stimulus to the students they teach. The academic name and standing of the College is paramount; to depart from those criteria would be dangerous to its life and reputation".'

This is a noble ideal thunderously expressed, though perhaps a little over-confident for a system which produced, for example, the first professor of English in Sheffield University whose 'teaching was uninspired and conventional, his supervision of research egocentric in the extreme, his own work unbelievably marginal and crabbed. And, to crown it all, he was unable even to encourage literature in his own university'.[2]

It may be asked whether 'vitality' and 'the provision of intellectual stimulus to the students'—attributes of the good teacher not necessarily confined to the most intellectual and scholarly—are not, in the situation of many universities in the emergent countries, more likely to prove successful than the most impeccable scholarship coupled with a poor delivery and a general distaste for adolescence. For example, Professor Arthur Lewis argues that 'the great majority of students entering a university are not research types, and do not need to be carried to the frontiers of knowledge. What they need is a broad education, to fit them for administration, commerce, or teaching up to fifth-form level'.[3] (It is not clear who teaches the sixth form.) Professor Lewis is using this as an argument for doubling student/teacher ratios since, in his view, where there is more than one university, many staff in the second (and therefore, apparently, minor) university would not be engaged in research. The argument is equally valid to promote the case of the training of young local graduates to become university teachers provided that their

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1. London, HMSO, 1958; quoted by A. M. Carr-Saunders, *New Universities Overseas*, p. 176 (London, Allen and Unwin, 1961).
2. P. Hobsbaum, 'Universal dullness: a case-history of marginal scholarship', *Universities Quarterly*, London, Vol. 19, No. 1, December 1964, p. 38.
3. W. A. Lewis, *Education and Economic Development*, p. 110; paper contributed to the Third Asian Regional Co-operation Seminar, International Student Conference (Kuala Lumpur, 1964).

personality, vitality and teaching powers are apparent, and their academic standing at least respectable.

Recruitment policies demand incentives, which in turn foster the competition which will ensure a selective system of recruitment, and a machinery which will safeguard the university against appointments made on other than academic grounds. Most candidates appear to be selected after a process of screening rather than of open competition, and where the power of appointment nominally remains outside the university, as in Indonesia (the President or the Minister of Education according to the seniority of the post) or Thailand (the Civil Service Commission), the Senate or senior academic body (generally acting in the first place through a committee) inevitably forms one of the screens—save in the case of the private universities of the Philippines where appointments are controlled by the governing or proprietary bodies. The initiating body may be a dean, a professor, or ministry, or even, in the case of Malaysia, one of two recruiting bodies formed from academic bodies in the United Kingdom. It is idle to discuss selection until there is competition; when this stage is reached it may be well to consider a system of appointment by the senate or the equivalent academic board, based upon a rigorous scrutiny by a joint *ad hoc* board of university staff and external assessors in the case of major appointments, or by a faculty board with an external assessor—both using full reporting procedures to the senate. The consideration of scholastic and academic record, prizes, posts and publications is a routine procedure, nevertheless calling for experience and expertise: the appraisal of evidence of past performance is usually, but mistakenly, a more casual procedure.[1]

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[1] As a case in point the following communication was recently received from the registrar of a university in the region on a pro-forma:

Confidential When replying please quote (L/PL(Educ)

Dear ....,

Your name has been submitted as a referee by .... in connexion with his/her application for the post of Lecturer/Assistant Lecturer in Education in the University of ....

I shall be most grateful if you can let me have your report in confidence on this candidate as soon as possible. Your assistance in this matter will be much appreciated.

Your faithfully,
Signed by A (illegible)
for B
for Registrar.

The inquiry is perfunctory indeed and couched in strange terms for a request by a learned society for a skilled appraisal of a professional person: it is difficult to write one letter about the same person for posts at two levels, there is no indication of the nature of the duties to be performed, of any special requirements, or of any personal characteristics that might assist an applicant. To make matters worse, no acknowledgement of a careful reply was ever received, and no indication given as to the fate of the candidate in question, but the 'report in confidence' was shown, quite without authority, to the candidate.

The perfunctory follow-up of—or even failure to pursue—references, accounts for many poor appointments, posts left unfilled, and stereotyped replies by referees who have a shrewd idea as to what weight will be given to their judgements. It is major error in recruitment which can be remedied without any expense.

The problems associated with the recruitment and employment of expatriate[1] staff are of a different order. In the Philippines the university system is sufficiently well established and extensive for the internal production of staff, many of whom receive additional training in the United States, and the problem in Indonesia is on such a large scale that contracts with universities in the United States have until recently offered the only practical means of dealing with expatriate staff. It is in the smaller countries that the problems arise in their acutest form. Here again some distinction needs to be drawn between those territories whose original university system was based upon British models and established under the colonialist regime—Burma, Malaya and Singapore; the former territory of Indo-China, with an educational system relying largely upon university education in France; and Thailand, free to develop as it felt inclined.

Despite these differences, the basic methods of recruitment now employed may be applied to all these territories: independent recruitment by the universities or the responsible ministry, generally through an official organization in the country of recruitment; recruitment through international agencies; and recruitment through bilateral aid and 'cultural agreements'.

In Burma and Malaya the universities were originally heavily staffed from Britain with, in the case of the University of Rangoon, assistance from the American Baptist Mission, which established one of the constituent elements of the present university, Judson College. The recent political temper of Burma has been highly antipathetic to foreign staff; student indiscipline has been notoriously disruptive; and the expatriate staff element is now largely confined to technologists and scholars from socialist States working in linguistic and cultural fields: for example, the Institute of Oriental Studies of Prague is generally represented in the country.

The exodus of foreign scholars was followed by the loss of a number of distinguished Burmese university teachers, largely as a result of a continued struggle for academic independence, and the standards of teaching have inevitably fallen through recourse to unwieldy classes and the employment of very junior assistant lecturers in a tutorial role.[2]

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1. Educationally the term 'expatriate' appears to be developing a pejorative connotation quite remote from its original somewhat nostalgic flavour. At one university in the region expatriate and Asian staff have agreed to substitute 'overseas'. Even this surely has a remotely imperial flavour?
2. It remains to be seen whether the new educational policy including an emphasis on quality, and restricted entry, will bring about quick improvements.

The initial staffing position of the University of Malaya in Singapore, the result of amalgamating Raffles College and the King Edward VII College of Medicine, was considerably complicated by the difficulties of establishing departments of Malay, Chinese and Indian Studies:[1] the normal methods of recruitment did not attract the best Chinese candidates; no Malay candidate of suitable academic status was forthcoming, and internal rivalries led to delay and controversy over the appointment of the head of the Indian Department: the possible development of these departments as centres of mono-racial thought and activity in a plural society remains an ever-present danger. The subsequent establishment in 1958 of a second division of the University in Kuala Lumpur—which in 1961 became a separate and second university—has emphasized the Chinese elements in the University of Singapore, which has a Chinese vice-chancellor, while the new university has recruited a large proportion of expatriate staff, including a number of Indians and Pakistanis.[2]

The tensions among staff arising on political grounds, either through racial antagonism or the struggle for university autonomy during a prolonged period of political crisis are not, from the general viewpoint, of as great significance as the divergence of aim between those staff members, not by any means all expatriate, who place first importance on the maintenance of academic standards with a view to 'equivalence' with the West and those who see in the adaptation of Western university concepts and practices to South-East Asia something more than the substitution of Asian for European flora in a botany syllabus. The crux of the matter lies perhaps in the selection of fields of research, and the application of the results of research as evidenced by the machinery of publication—local or international. These difficulties, though perhaps found in their most accentuated form in Malaya and Singapore, are inherent in organizations which are not indigenous, and many staffs where expatriates are heavily represented.

The over-all problems of recruitment are well illustrated by a paper recently read by Mr. Foo Yeow Yoke, registrar of the University of Malaya, to a regional seminar on university organization.[3] In addition to the factors influencing recruitment directly outlined in this chapter—terms and conditions of service, facilities for research, and opportunities for promotion—Mr. Foo Yeow Yoke draws specific attention to the difficulties that are being, or will be encountered, in recruitment when the vernacular becomes

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[1] See Professor Silcock's historical chapter (*South-East Asian University*, op. cit., Chapter II); reference should also be made to his complementary article on 'The development of universities in South-East Asia to 1960', *Minerva*, London, Vol. II, No. 2, 1964.

[2] An interesting situation, since both India and Pakistan themselves are suffering from a shortage of highly qualified staff. The attraction of Malaya, as might be expected, has mainly consisted of the comparatively high salaries and low teaching loads.

[3] ASAIHL, report of a *Seminar on University Organization and Administration, 20-24 January 1964* (Bangkok, Association of Southeast Asian Institutions of Higher Learning, 1964).

TABLE 54. University of Malaya: rate of recruitment of staff

Year	Expatriate	Local	Total	Professors	Senior lecturers	Lecturers	Assistant lecturers
1959	20	18	38	12	1	16	9
1960	17	6	23	2	2	11	8
1961	26	9	35	1	—	21	13
1962	17	12	29	3	1	18	7
1963	14	26	40	7	1	15	17
1964	23	31	54	4	1	31	18

Source: ASAIHL, *Seminar on University Organization and Administration*, op. cit., p. 103. Mr. Foo Yeow Yoke has kindly added the figures for 1964 to his original tables.

TABLE 55. University of Malaya: staff/student ratio

Year	Staff	Students	Ratio
1959	38	323	1 : 8
1960	60	654	1 : 10
1961	112	1 010	1 : 9
1962	120	1 341	1 : 11
1963	144	1 736	1 : 12
1964	192	2 225	1 : 11.6

Source: ASAIHL, op. cit.

the medium of instruction, and he comes to the conclusion that world sources will no longer become available, and the universities will have, as a deliberate policy, to produce their own staff, a process of in-breeding which certainly strengthens the case for a certain element of decentralization in the university system discussed earlier in this report. He also refers, however, and the reference is important, to the proposal to establish a 'triangular scheme' made in the Report of the Fulton Commission,[1] by which, if universities with some staff members speaking the needed national language but teaching in a world language were seconded to the university requiring teaching in the national language, the seconding universities could in turn be recompensed by the appointment of replacement staff from countries offering staff assistance and using the same world language—the language in the case of the Chinese University of Hong Kong being of course Mandarin Chinese; the

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[1] Report of the Fulton Commission, 1963. *Commission to Advise on the Creation of a Federal-Type Chinese University in Hong Kong* (Hong Kong, Government Printer, 1963). This report is summarized in *Minerva*, Vol. I, No. 4, Summer 1963, but there is no mention of this ingenious scheme.

Table 56. Some comparative staff salary scales and supplements

Location	Salary scales Senior lecturer	 Lecturer	 Assistant lecturer	Expatriation allowance	Family allowances, etc.
	£	£	£		
United Kingdom	1 985-2 600	1 250-2 300	1 050-1 275	—	—
Malaya	1 890×70 - 2 310	1 338×56 - 1 624/ 1 680×63 - 1 995	1 120×56 - 1 232	'Inducement': Lecturer, £420-560; Assistant lecturer, £280.	'Variable' (dependants, e 35 % of basi salary; range £210-560.
Singapore	1 750×70 - 2 100	1 148×49 - 1 442/ 1 540×56 - 1 820	1 001×49 - 1 099	£280-308	—
Ghana	1 750×75 - 2 200	1 050×50 - 1 400×75 - 1 850	900-950	20 % of salary.	Yes: unit unspecified.
Malawi	2 550×80 - 2 950	1 550×60 - 1 850×80 - 2 410	. . .	Included in scale.	—
Lagos	2 275×75 - 2 575	1 200×75 - 2 175	950×50 - 1 100[a]	—	Yes: unit unspecified.
Nsukka	2 275×75 - 2 575	1 200×75 - 1 650/ 1 725×75 - 2 175	. . .	—	Yes: unit unspecified.

General notes.

All salaries are expressed in sterling.

The absence of various supplements in certain cases refers only to the absence of any reference in the initial advertisement of the post: the absence, however, may reflect a scale of local values!

of living wance	Superannuation or provident fund	Housing	Other
—	FSSU[1]	—	Removal expenses.
—	Provident fund: staff contributes 5 %, university 15 % of basic salary.	£117-175.	Medical benefit;[2] leave every three years.[3]
-650 mp.)	Provident fund.	Partly furnished house/flat at 'reasonable' rent.	—
—	FSSU maintained or equivalent.	Accommodation with basic furniture at maximum 7.5 % of salary.	Outfit and car allowance; leave.[4]
—	FSSU-type.	As above, plus cooker and refrigerator, maximum £225.	Baggage; leave;[5] education allowance; outfit allowance.
—	Superannuation.	Subsidized accommodation.	Leave;[7] car and outfit allowances.
—	—	Part-furnished at rent not more than 7.7 % of salary.	Baggage; car allowance; leave.[8]

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ederated Superannuation Scheme for Universities.

o advertisement refers to the medical services made available in a large number f cases: this may represent a considerable benefit.

fter not less than nine terms, not more than ten.

hree times in four years.

hree months every 21 months (up to five adult passages).

r if over 28 or holding a higher degree £1,050×50 to £1,150.

egular' family passages.

fter each tour of approximately 21 months. Passages for appointee, wife and up to e children under 11 years.

possible sources of secondment the universities of Hong Kong, Singapore, and Malaya; and the third partner, universities in the Commonwealth and the United States of America. This mild form of academic general post may, at least in cases of desperate need, suggest a solution for other linguistic groups in the region.

Recruitment for the new University of Malaya was based both upon local recruitment, where security of tenure is, of course, of great importance, and recruitment in the world market, with the assistance of the Inter-University Council for Higher Education Overseas and the Association of Universities of the British Commonwealth. Tables 54 and 55 were given by Mr. Foo Yeow Yoke to illustrate the quantitative aspects of his problem.

The proportions of expatriate and local staff prompt immediate reference to one of the major problems of technical assistance in whatever field—the dilemma of, on the one hand, establishing both incentives for recruitment for service overseas and also a form of compensation for financial difficulties thus incurred and, on the other, of avoiding any suggestion of discrimination between expatriate and local staff members at the same level. The fictional image of the expatriate 'expert' proceeding from his air-conditioned villa to his air-conditioned office in an air-conditioned limousine to plan famine control measures in the remote countryside over-emphasizes a reality which has not endeared some 'experts' to their local colleagues. Where motives of service or adventure have conditioned recruitment, as in the case of the former Australian *pegawai*[1] in Indonesia, the sixth formers of Voluntary Service Overseas, or the young people of the Peace Corps, it has been possible to impose quite rigorous measures to ensure a conformity of living standards with local colleagues; but such measures are inappropriate to professional staff recruited from established positions in their country of origin.

In this context the Registrar of the University of Malaya refers to the proposal of the Asquith Commission[2] that an expatriation allowance should be paid by and in the contributing country, thus relieving local finances, but not local feelings: the proposal never in fact materialized. The general effect of expatriation allowances has been to inflate local salaries to match the salaries paid to expatriates, which is likely to result in considerable inflation or dissatisfaction in other local services as the number of expatriates dwindles and the number of local staff receiving salaries considered high by local standards is seen to grow considerably.

The two solutions posited by Mr. Foo Yeow Yoke are the standardization of university salaries on a global basis—since recruitment is from a world market—or the equivalence of university and civil service salary scales. The former disregards the economic factors regulating national salaries, and the latter is said to be unacceptable to academics who consider the nature of their work to be quite different. The civil servant, who perhaps too often is the decisive factor in salary negotiations, has been known to make the same comment: the improvement of the relationship between senior civil servants and senior university staff would do much to oil the wheels of the machinery of development.

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[1] Young Australian graduates working as teachers and in other developmental capacities within the Civil Service system in Indonesia.

[2] *Report of the Commission on Higher Education in the Colonies* (London, HMSO, 1945. Cmd. 6647).

At this stage it is appropriate to examine what in fact are the terms offered to expatriate staff both in the universities of Singapore and Kuala Lumpur, and what inducements, if any, are still offered:[1] the terms of service quoted in Table 56 are drawn from recent issues of *The Times Educational Supplement,* and have doubtless been reproduced in other appropriate Commonwealth journals. A comparison is made with basic salary scales in the United Kingdom, and with a number of universities in West and East Africa: these universities are of course strong competitors in a market which is being considerably reduced, at least for a decade, by the present growth of British and Commonwealth universities: India and Pakistan still remain useful recruiting sources even though this may not be in their own national interests.

It is of course appreciated that respondents to the advertisements here digested will receive many more details concerning conditions of work and opportunities for research, but it must already be clear that despite local objections, the question of inducements and incentives in a competitive market has by no means been neglected.

The method of recruitment by the machinery of public advertisement and the appointment of external assessors, whilst providing appropriate safeguards, also entails an inordinate delay. Further, there is the difficulty of comparing assessments of candidates made by various bodies and individuals. The process is complicated by the fact that a number of individuals may all be candidates—and good candidates—for the same group of scattered posts, and no acceptable method has yet been found for establishing a clearing house procedure. Indeed the historical accidents whereby the Inter-University Council for Higher Education Overseas usually recruits for the West Indies, Malta, Singapore, the Sudan, and most of Commonwealth Africa,[2] the British Council recruits for India, Ceylon and Pakistan, and many non-Commonwealth countries (including Thailand); while the Association of Universities of the British Commonwealth concentrates, in developing countries, on Hong Kong and the University of Malaya (Kuala Lumpur); is scarcely calculated to clarify the ultimate destination of a candidate applying for posts in Lagos, Lahore and Kuala Lumpur.

It is difficult not to agree with Mr. Foo Yeow Yoke that sending a recruiting team once or twice a year to various parts of the world is the most satisfactory method, and its expense well justified, both for the university, whose officers can meet and assess the candidates personally, and the candidates, who can obtain a wide variety of information about living and working conditions.

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[1] See also A. M. Carr-Saunders, op. cit., Chapter 15.

[2] The University of Ghana has its own recruiting office in Great Britain.

The other approach—though the solution it offers is a short-term one—is a system of secondment, as carried out by the Department of Technical Co-operation, the Fulbright Commission, the Colombo Plan, the Ford Foundation and the Asia Foundation. Secondment indeed is a device for giving impetus rather than for ensuring steady development, and staff on secondment—often given to anxiety about their position on return, or the loss of an opportunity for promotion—are frequently slow to understand a new environment and may often absorb more from a new experience than they can contribute in the one or two years available.

The process of the recruitment of expatriate staff by universities in receiving countries has been considered at considerable length since the principles involved are applicable to other forms of the recruitment of expatriates, though such appointments are likely to be less significant since generally they are for a shorter period—often only for two years.

Recruitment on contract for short-term appointments is normally effected either by the international agencies, through national programmes of bilateral assistance, or through voluntary bodies and foundations with educational projects. The most massive recruiting scheme of a bilateral intergovernmental nature is that operated between France and Cambodia under a cultural agreement, through which institutions originally founded by the French and now constituent elements of the Royal Khmer University in Cambodia are still being largely staffed by French specialists: for example, the Faculty of Medicine has a Cambodian dean, but the rest of the faculty are French. The University of Saigon, which retains much of its original French pattern and continues to offer some teaching in French, also continues to recruit from France—though apparently a number of the staff thus recruited are Vietnamese, educated and resident in the metropolitan country. In any case, in terms of its international contacts, the University of Saigon offers a strong contrast to the new University of Hué, of which Professor Silcock wrote 'It remains unfortunate that because of its remoteness few foreign scholars are likely to visit the University of Hué. It is a place of hope in which one responds to the vitality of the academic spirit. For here, under devoted leadership, a handful of scholars, unrecognized and almost unaided, are tackling their immense problems with true academic humility, ambition, and zest.'[1]

Thailand, and even more particularly Indonesia,[2] have made considerable use of the 'college contract' system whereby individual universities in the donor country (the United States) are given the responsibility of effecting, with the recipient university, the preparatory survey, the engagement of a teaching team, and the organization of training facilities in the American university necessary to carry out the operation planned—perhaps the development of a medical faculty or the establishment of a school of public administration. The intimate link established between two distant universities is likely to prove of mutual value for many years, and the support offered one another by members of a contract team sharing each other's difficulties —and successes—can contribute much, whilst the considerable size of the schemes enables a wide variety of aspects of development to be undertaken simultaneously whilst taking care of the many loose ends which can entangle the progress of the single expert.[1]

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[1] T. H. Silcock, *The South-east Asian University*, op. cit., p. 44.
[2] See Chapter 2, p. 41.

A possible danger of the large contract lies in the difficulty of recruiting suitable staff members, since the contracting university can seldom spare its own staff: the annual visit of a wandering dean is not always an adequate supervisory procedure.

Possibly the most valuable single feature of this scheme is the intimate relationship that can be established between the needs of the Asian university and the training of local staff. Too often the most valuable asset of a fellowship for training overseas is squandered through a variety of circumstances, many of which may operate simultaneously: the fellowship may be awarded, not on grounds of need, but to reward long, faithful or otherwise unrecompensed service; the holder may not return, or may be transferred away from the post and the department for which the training was designed; the training may be simply the acquisition of a higher degree without reference to the need for its attainment other than the fact that the holder can move to a higher salary scale, since these are often based on academic qualifications. Often the optimum training over a given period should be carried out in different institutions, and by different means, which implies a need for familiarity with the problems of a wide variety of posts to be filled by returning fellows which can scarcely be expected in the recipient country. In contract schemes these fellowship problems scarcely arise: needs are known, the person and the career of the fellow are identifiable, and the best training course can be planned by an institution which has a vested interest in the fellow and his course. It cannot be too strongly stressed that students, at whatever level, able to profit from highly organized training facilities are most valuable assets in developing countries, with a strong multiplier potential, but they can be only too easily wasted or dispersed.

It does not, of course, follow that the less elaborate training programmes established under the Colombo Plan, by the British Council, or through the United Nations Technical Assistance Board, are necessarily misdirected: in the case of university staff, however, whose training will have repercussions on their pupils and on research for years to come, it does mean that the liaison with another institution of higher education can be of very great value. Indeed the principle may well be carried beyond the question of individual training to major schemes of co-operation and staff interchange, an admirable example of which is afforded by the Afro-Anglo-American Program in Teacher Education organized between Teachers' College, Columbia University, New York, the Institute of Education of the University of London, and a number of anglophone universities in Africa.[1]

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[1] Thus, for example, avoiding the dilemma of a distinguished Australian physicist who spent a large part of his long assignment in one South-East Asian university endeavouring to train the glass blowers without which his work could not be undertaken, and ended up by teaching laboratory technicians rather than graduates.

TEACHING IN THE UNIVERSITY

A series of statistical and critical analyses recently carried out in the United Kingdom, and embodied in the reports of the Robbins Committee[2] and the Hale Committee[3] deal respectively with the structure and duties of the teaching body in higher education, and the teaching methods used in universities.

The studies offer an example of the nature and value of statistical compilation and analysis which is novel in educational inquiries made by the British Government, hitherto largely confined to an historical method, and, so far as can be ascertained, quite foreign to the region, though the machinery through which such studies can be effected is probably the least of the obstacles which such an undertaking on a regional basis would encounter.

The structure and function of university teaching are considered in terms of student/staff ratios, wastage and recruitment, the grading of staff and the balance of staff within faculties, qualification, age and promotion structures, mobility, salary scales and the claims of teaching and research.

Such a series of exercises within the region would be complicated by the very considerable reliance on part-time staff, the fact that teachers may be engaged in three or four institutions, the presence of expatriate staff, a wide variety of academic ranks and salary scales, and different concepts of the status of the university teacher. Similar studies on a national basis would, however, be of major significance throughout the region, and a comparative study of the country results should be an essential prerequisite of further planning.

A number of indicators appearing in the Robbins Report may, in the meantime, be of some general guidance in future planning.

First, the over-all student/staff ratio is shown as improving from 9.18 in

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[1] Of particular relevance to this study is the *Report on a Conference on the African University and National Educational Development* held at Lake Mohonk, New York, from 8 to 18 September 1964, published by the Institute for Education in Africa, Teachers' College, Columbia University, New York.

[2] *Higher Education*, op. cit., Appendix 3.

[3] University Grants Committee, *Report of the Committee on University Teaching Methods* (London, HMSO, 1964).

TABLE 57. Percentage distribution of staff status in five Indonesian universities

University	Professors	Intermediate categories of staff	Graduate assistant staff
	%	%	%
University of Indonesia	4.6	22.2	63.2
Padjadjaran	1.0	39.4	59.6
Gadjah Mada	4.2	27.8	68.0
Menado	2.3	23.0	74.6
N. Sumatra	5.5	13.9	80.6

1938/39 to 7.5 in 1962/63 (in the University of Malaya it started[1] at 8, but reached 12 in 1963); but there were considerable variations within faculties: in 1961/62 the ratios were: arts, 8.8; science, 7.0; technology, 8.8; agriculture, 3.0;[2] medical subjects, 6.0; all faculties, 7.5. Humanities, 8.5; social studies and education, 9.3.

Excluding Oxford and Cambridge,[3] where a large number of teachers are employed by individual colleges, not by the university, the 1961/62 balance of staff gradings was: professors, 11.9; readers, 6.5; senior lecturers, 12.5; lecturers, 47.1; assistant lecturers, etc., 22.0; the weight was clearly centred on the senior lecturer/lecturer grades.[4] In non-medical faculties the three top teaching grades, professor, reader and senior lecturer, accounted for 25 per cent of teaching staff.

Some comparison may be attempted with the staffing balance of five Indonesian universities—three of the old and large State universities (the University of Indonesia, Gadjah Mada and Padjadjaran) and two newer State institutions in the provinces, at Menado in the Celebes and the University of North Sumatra at Medan.

The high percentage of graduate assistant staff clearly reveals both the difficulty of rapid university expansion in the face of staff shortages, and the heavy pressure that must be felt by the professional staff.

In the United Kingdom, of teachers with first degrees, 81 per cent have an honours degree from a British university, and 16 per cent pass or ordinary degrees (9 per cent in medicine, in which honours are usually only awarded

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1. See p. 369 above.
2. The figure is low since most departmental staffs include research economists and the staff of research institutes. From a teaching point of view there is little difference between agriculture and other faculties.
3. It is frequently necessary to exclude Oxford and Cambridge from comparative studies of British universities.
4. A University Grants Committee recommendation indicates that in non-medical faculties the proportion of readers and senior lecturers combined should not exceed 22.2 per cent of all non-professional staff.

TABLE 58. Number of hours per week spent in teaching, research and administration during term in British universities by grade and faculty

	Actual teaching	Teaching, including preparation and correction	Research	Administration
Grade				
Professor	6	11	8	10
Reader	8	13	12	6
Senior lecturer	8	13	8	5
Lecturer	8	15	10	3
Assistant lecturer	8	16	12	2
Demonstrator	10	15	17	1
Faculty				
Humanities	7	15	8	4
Social studies	6	12	8	6
Science	9	14	14	4
Applied science	9	15	8	5
Pre-clinical medicine	7	10	16	3
Clinical medicine	6	8	12	4

as a distinction). Of all teachers with honours degrees, 59 per cent have first-class honours (76 per cent at Oxford and Cambridge). Of all teachers, 47 per cent have doctorates, and 13 per cent a second degree (excluding the Oxford and Cambridge M.A.'s for which further study is not required). In comparison with the 47 per cent of staff with a doctorate in the United Kingdom the following figures have been obtained: University of Malaya, 30 per cent; certain schools of the University of the Philippines: College of Arts and Science, 17 per cent, Graduate School of Arts and Science, 63 per cent, Graduate School of Education, 12 per cent; University of the Far East (private), 8 per cent; University of Santo Tomas (private religious foundation) in seven faculties, 16 per cent; Law Faculty of the University of Hué (Viet-Nam), 30 per cent; Chulalongkorn University, 9 per cent, Kasetsart University, 20 per cent (Thailand); University of Mandalay (Burma), 7 per cent.

A discussion of the work-load required of university teachers is possibly, despite its materialism, the most appropriate introduction to the question of research. Here again the Robbins Report[1] has analysed the situation in the United Kingdom: university teachers spend in term time (which stands in the ratio 5 : 3 with vacation time) on the average 7.5 hours a week in teaching and 5.5 hours in preparation for teaching and correcting students' work. This period of teaching is counterbalanced by average periods of 11 hours on research and 4 hours on private study. Eleven further hours are spent on administration, examining, committees, student welfare and extramural teaching. The arithmetical mean of the analysis of their time reported by all staff contributing to the survey was 40.5 hours per week spent on all forms of professional work.

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[1] *Higher Education*, op. cit., Appendix 3, p. 56 and 57.

The figures per week have also been tabulated in grades: the average professor, for example, spends less time on research than most of his junior colleagues: administration and other non-teaching activities occupy more than half his time. The balance between the allocation of time to teaching and research is shown[1] both for grades and by faculty. The time occupied by administration is also shown but not that for work outside the university.

In terms of percentages of working time during term, university teachers spend 33 per cent on teaching in all its forms, 28 on research, 11 on private study, 11 on administration, 11 on other university duties and 6 on teaching, consultation and committee work outside the university. The percentages vary considerably, of course, in vacation time—the teaching load drops to 8 per cent, and research rises to 45 per cent.

In over-all terms the percentage of annual working time spent on research by university teachers as a whole is calculated as 34 per cent full working time, and the total time including time spent on private study and administration attributable to research is calculated at 48 per cent.

It is the significance of research in the analyses of work-load that led Professor Arthur Lewis[2] to question the concept of the university teacher, equipped both to instruct and to conduct research, as responding to the actual needs of many higher level institutions in developing countries, his argument being that whilst the first or major university in any such country must by definition be equipped with staff and facilities for research, there was surely a great need in other institutions for professional training, which would call upon instructors rather than researchers, a policy which would enable the teaching-load to be doubled, thus saving expense and reducing the problem of securing staff. This is certainly a narrowly utilitarian view of the situation which sees a first-degree institution as a crammer's rather than a college. It is true that there are many good teachers who have no flair, patience or whatever qualities may be in question, just as there are brilliant research workers who become dumb, dreary or panic-stricken when faced by a class—but on the whole university teaching is best conducted by those who are still learning, and each aspect—teaching and research—has its contribution to make to the general ambience of the university.

The pressure upon the university teachers is certainly one reason why the research functions of the universities in the region are underdeveloped. A study of teaching-load, however, offers very little evidence on the position

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[1] ibid., extracted from Table 61.

[2] See above, p. 365.

TABLE 59. Work-load of a lecturer in pure science, Great Britain, 1961/62

Type of duty	Term	Vacation	
	Average hours per week	Average percentage of working time	
		All senior lecturers	All science faculty
A. *Non-teaching duties*			
Research	13.6	37.5	49.6
Private study	4.3	13.1	11.7
Administration	3.2	13.8	9.0
Advising students	0.7	2.3	1.6
Examining	1.3	6.8	5.5
Meetings	1.2	4.9	5.0
Other university duties	1.0	4.0	2.8
Consulting work	0.2	8.6	4.2
External committees	0.2		
Other	0.3		
B. *Teaching duties*			
(a) Undergraduate:			
Lectures	2.4	5.1	5.7
Discussion periods	1.1		
Practicals	4.3		
Written exercise classes	0.3		
(b) Post-graduates	1.4	3.9	4.9
(c) Preparation and correction	6.2		
TOTAL	41.7	100	100

since so many teachers work only on a part-time basis: thus in Viet-Nam, for example, while the teaching-load for 'regular' members of the University of Saigon ranges between three and eight hours per week, and staff receive additional remuneration for the additional teaching they are required to undertake, it appears that most university teachers at the same time hold posts in various government agencies, whilst the majority of the Law Faculty are either judges or lawyers.

In British science faculties the average teaching hours per week are 8.6, and it does not appear likely that the specific teaching-load varies greatly by rank: the figures in Table 59 indicate the average work-load, in term time and vacation, in the science faculty, of a senior lecturer.[1]

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[1] *Higher Education*, op. cit., Appendix III: compiled from information in Annexes N, O, P, Q, R and S.

TABLE 60. Science teaching-loads in selected universities of the region, 1961

Country	Teaching hours per week
Philippines:	
(a) University of the Philippines	15 (reduced in the case of staff undertaking research or administrative duties).
(b) Private universities	24 (payment being by the hour, the full quota is generally completed).
Indonesia	4 (professors) 8 (senior lecturers) 12 (junior lecturers) lecturing only
Malaya	4-6 (plus 6-8 hours' laboratory instruction and supervision).
Singapore	6-15
Thailand	6-9 (professors). 9-12 (senior lecturers). 15-18 (assistant lecturers).
Viet-Nam	3 (professors). 6 (senior lecturers).

Source: *Staffing Problems in University Science Departments*, preparatory paper for Unesco Seminar on the Teaching of Basic Sciences in the Universities of South-East Asia, Manila, 1961.

It will be observed that in term time, of a 41.7 hour working week, 13.6 hours are given to research, 15.7 hours to teaching, including 8.1 hours in contact with undergraduates, and 1.4 hours with post-graduate students. The time spent during vacation (for which no absolute figures are available) on research rises to approximately half the total working time.

A certain amount of information regarding science teaching-loads in the universities of the region was collected at the Unesco Basic Sciences Meeting held in Manila in November 1961—the same year, and this may be crudely tabulated as shown in Table 60.

The main difference between the loads shown by the various figures in the Robbins Report and those for the region is that, whereas in the British universities the teaching-load is fairly constant throughout the teaching grades of the faculty, the teaching-load in the region is lessened with seniority, so that the younger staff members who might be expected to be developing research are in fact the most heavily engaged in teaching.

It seems probable that in most of the countries of the region research has been regarded, when the priorities of educational development were assessed, as a luxury. This, if it is so, indicates a complete failure to appreciate the importance of research in the adaptation of technological development to the particular needs of the countries of the region, whether in the fields of agriculture, medicine, engineering and construction, or in the socio-economic analysis of problems of rural and urban development. Above all, it is a failure to appreciate that the foundation of all future planning must lie in establishing facts by research, followed by the analysis of these facts. If governments are to improve on prognoses based on the success or failure of the empirical methods of the local entrepreneur, they must act, as Professor Silcock says,[1] 'on factual information scientifically collected and not on the arrogant certainty of the petty bureaucrat'.

Certainly the position is very different from that of the American professor who must publish or perish: the high academic demands of international journals have not encouraged the urge to publish among young scholars occupied with filling-in gaps in local data rather than extending the frontiers of knowledge. The problem of penetrating the thickets of international academic publication—an enterprise doubtless fostered by the traditions of a Western education but of limited significance within the region—should not prove an insuperable obstacle: the local review in the national language, with abstracts in a language of wider communication for colleagues in other countries, is a most practicable form of publication, provided that the style and unpretentiousness of the journals is in keeping with their modest purpose. Furthermore the microfilm is rapidly overcoming some of the problems of distribution.

Apart from the question of staff time, the major obstacle to research programmes is certainly finance. Too often the regular university budget contains no item for research expenditure, and it has to be financed from special sources including foreign aid, principally the foundations—an activity in which the Asia Foundation has been noticeably generous—from endowments and ministerial or other special private as well as public allocations, often from a central agency which controls all research expenditure. The result is that research projects do not normally or consistently stem from the activities of the staff, but are frequently taken up *ad hoc* in order to secure funds and maintain prestige. The situation is perhaps most favourable in the Philippines, where the incentives to research in the State University of the Philippines have taken the form of financial assistance, reduced teaching-loads, publication avenues, and the establishment of research institutes—as in the case of the Institute of Asian Studies and the Institute of Economic Development and Research. In the private universities research is a matter for the initiative of the university, a somewhat grandiloquent description of a situation of *laissez-faire*: it is not clear how far, if at all, they co-operate with national research bodies.

It does not seem to be generally appreciated within the region that research is an expensive process: for example, in 1960/61 payments for research in science and technology amounted to 9.1 per cent of the total income of

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[1] T. H. Silcock, op. cit., p. 159. Chapter VI of this work is devoted to a study of research conceived in terms of the needs of the region.

British universities,[1] or £6,220,000, of which just over half was provided by the government departments and research councils, other payments coming from public corporations and industry, the foundations or learned societies (e.g., the Royal Society). An inquiry carried out by the University Grants Committee for the Advisory Council on Scientific Policy indicated that research in the 'non-arts' subjects accounted for 49 per cent of staff time and 50 per cent of departmental expenditure.

It could be argued that the somewhat haphazard process whereby research is financed from a variety of sources might lead both to overlapping and the opening of gaps: the latter danger is avoided by a series of reviews of research activity by the Royal Society, which has a machinery for consultation with the various research councils. Apart from these dangers it may be considered that the present system prevents undue pressure which could be generated either by government or strong personalities where funds are channelled through a single source.

At this stage of development a modified approach should be made to this scale of research, whose main function should lie not so much in maintaining those basic inquiries on which technological development is subsequently based, as in the value of research as an element in the teaching process, particularly in the development of post-graduate schools, and as a contribution to the solution of some of the wider problems, already outlined in this report, which confront the developing countries.

Research is used by the Robbins Committee[2] as a convenient portmanteau word to cover the wide range of intellectual activities that serve to increase man's power to understand, evaluate and modify his world and his experience. It is true that a great deal of the teaching in the universities of the region must perforce concentrate on professional training to meet the urgent needs for high-level manpower. Even that training need not consist solely of the presentation of predigested gobbets of information. But certainly at the post-graduate level the opportunity arises for the teacher to imbue his pupils with his own ideals, techniques and methods, by exhibiting them in the common search for wider knowledge and understanding. The post-graduate schools now slowly developing in the region will serve as the source of the scholars who will develop and perpetuate the work of the university when they return to it as teachers; as centres where the traditions of scholarship can flourish; and as sources of knowledge vital to the progress of the country which supports them.

There are at least four approaches to the organization of research: surveys in which field data can be gathered by undergraduate groups; more elaborate and more intensive investigation in which the field work is undertaken by graduate students; the work of the single researcher, at a number of levels; and the work of an interdisciplinary team, the concept of which has already been discussed at some length in this report.[1]

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[1] University Grants Committee. The figures on financing university research in Great Britain have been taken from an article by A. C. Finch in Vol. 17, No. 3, of the *Universities Quarterly*, June 1963.

[2] *Higher Education*, op. cit., *Report*, p. 181.

The research involving field work is of a nature particularly suited to the needs of the region, where socio-economic data are required before developments in agriculture, medicine, local government and education can be adequately planned, and where there is a wealth of geographic and historical detail still to be gleaned. The organization of such work is a considerable task, but provided that students are not treated as the field workers of a public opinion poll or market research organization, with a merely mechanical task to perform accurately, but instead are involved in the project from the framing of its questionnaires to the compilation of its statistical evidences, it is difficult to conceive a more satisfactory teaching method.

An illustration of this type of research is afforded by a project carried out under the direction of Professor Ungku Aziz, head of the Department of Economics in the University of Malaya, the origin and methodology of which is fully reported.[2]

The genesis of this study was a report by the Federal Government of Malaya on the developing subdivision and fragmentation of rubber estates, released to the press during the last week of December 1957. Professor Aziz, then lecturer in economics in the University of Malaya at Singapore, reviewed the report on the radio, and subsequently published an article on 'Land disintegration and land policy in Malaya' in the *Malayan Economic Review*. Two of his honour students also made studies of estate fragmentation in July 1959, on the basis of field work in various States.

In January 1960 the Federation Government, moved to action at last, inevitably appointed a committee to inquire into the question, and an interim report recommended that a survey of the position be carried out by the Department of Economics of the University of Malaya (the branch by now established in Kuala Lumpur, to the chair of which Ungku Aziz had been appointed).

Thirteen undergraduates reading economics in the first year of the economics honours course were given special training in field work including two pilot surveys; four questionnaires were drawn up and pre-tested; and their studies between March and May 1961 formed the basis of their own required graduation exercise made under staff supervision, various problems of technique and presentation having been discussed in seminars. All their material was analysed and tabulated by the staff of the department, and formed the basis of the professor's report.

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1. See above, p. 258-67.
2. Ungku Aziz, with the assistance of undergraduates and staff, *Subdivision of Estates in Malaya 1951-1960* (Kuala Lumpur, Department of Economics, University of Malaya, 1962, three volumes). The material here drawn upon is taken from Chapter I, Volume I.

An interim report was presented to the committee in December 1961 to acquaint members with the progress of the study, give them some idea of its magnitude, and obtain their approval of its methodology and presentation.

The data were checked, and where necessary, additional information was obtained, and the final report was prepared by the professor between March and September 1962, when five of the original graduation exercises were edited and prepared as case studies for the report.

Thus the roles of the main participants were:[1] (a) the professor contributed the original notion and scope of the survey, designed the scheme of field work and the format of the report; (b) undergraduates were responsible for field work and for submitting reports or graduation exercises as well as securing the completion of questionnaires and the filling-in of maps; (c) the academic staff supervised the writing-up of graduation exercises, and participated in discussion and seminars; (d) other staff assisted with the computation, tabulation and some aspects of field work and editing.

During the exercise the undergraduates interviewed more than 1,700 people; it is estimated that they received advice and information from some 500 more. They came into helpful contact with government officers from the District Administration, the Labour, Medical, Social Welfare and Drainage and Irrigation Departments. They were assisted by the Employers' Association and the appropriate trade unions. The Chief Statistician provided clerical assistance to collect estate data, the Department of Agriculture produced its census records before publication, the Government Printer and the University Cartographer gave appropriate assistance. Finally the Government provided M.$29,600, and the Asia Foundation over M.$30,000, included in a research grant of M.$81,000 made to the Department of Economics.

Doubtless the process of this project has been matched in method, or scale, by other universities in the region: it remains an example of research spread over a whole department (and more widely within the university) with a major teaching value, making a vital contribution both to the development of Malaya and, not without significance, to public relations between the university and a wide range of officialdom, the heads of the great rubber-planting community, and the public at large. It seems supremely irrelevant to wonder whether news of this project would make any impact on the international economic reviews.

This pattern of government- and foundation-supported work is not general throughout the region—there have been a variety of situations ranging from the University of Saigon, which declared its unwillingness to undertake research for the government to Chulalongkorn University in Thailand which is required to carry out unpaid research, as was the University of Rangoon.

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[1] ibid., Vol. I, p. 9.

In the Philippines, however, government contracts have been awarded both to the State university and to several private universities.

Research sponsored by the foundations had already been mentioned, with specific reference to the Asia Foundation. The international organizations have been slower to recognize the advantages of directing studies through an existing organization in the country which is to receive technical assistance. The Development Decade approach appears to rely more strongly upon a quantitative than a qualitative programme, and even the universal acceptance of planning techniques appears to have taken the necessary background of factual research for granted—a presumption inviting disaster. Unesco's approach to research has been largely confined to individual missions save in certain fields of the pure sciences, where research in oceanography and seismology is being developed by national and regional participation with the agency. A happier example has been furnished by the commissioning of local studies into savings by the Economic Commission for Asia and the Far East.

This approach to the question of research is not merely utilitarian—but it does suggest that the publication of papers in international journals should not be the main aim of scholarship in South-East Asia. 'Research is important because of its effect on what the university teaches, because the country's best students should be taught by people whose minds are on the move, and because a drive toward research persuades businessmen and politicians that they need new information. Much of the research that will help in these respects will do relatively little for the university's international reputation. Work in the national language, unless it is absolutely outstanding, usually will be entirely unnoticed abroad; much of the other work which would help to generate a research tradition would not attract much notice in the competitive academic world of today. All the same, for the students and for the country it can be important; it can mean a live university instead of a production line; it can create a university regarded by graduates as the place where they acquired their main interests in life and not merely their degrees.'[1] It is necessary to go a little further than this. The independent specialized research institute is well known within the region,[2] and there is a tendency for this type of development to spread, witness in particular the magnificently equipped but possibly isolated Applied Scientific Research Corporation of Thailand the strength of whose link with Chulalongkorn University is yet to be proved. It is difficult not to feel that one reason for the growing number of such small research empires is their suitability for financial assistance by organizations seeking projects which lend themselves to development without the complications attending on operations carried out within a larger complex, and which also are most readily identifiable with the sponsoring agency.

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[1] T. H. Silcock, op. cit., p. 175.

[2] See above, p. 260.

It does not appear that the universities always cherish resentment at this situation or trend, though there have been complaints about the poaching of staff. On the other hand, senior members of the staff of the University of Malaya have been reported as disclaiming any interest in research into rubber, carried out by the very-long-established Rubber Research Institute.[1] which has no organic link of any kind with the university. These views were doubtless dictated in part by the present lack of facilities at the university. for such activities, and the existence of a senior and most capable *ad hoc* organization; nevertheless it is scarcely an encouragement to research in general to find such an attitude adopted towards a quite vital sector of the economy—a Pilatic washing of hands.

The point has been dwelt on again in this chapter in view of its significance in relation to university staffing. It has been put forward with finality by Dr. Roger R. Revelle, director of the Center of Population Studies at Harvard University, in addressing the Sub-Commission on Natural Sciences and their Application to Development at the thirteenth session of Unesco's General Conference: 'I hope that we will resist the temptation to establish research institutes and organizational schemes which draw scientists away from the universities. It is true that in many countries of the world the universities are remarkably poor and incredibly bad. But if the future of science rests in any single place, it rests in the universities. We cannot afford to draw away from the universities the research workers and the scientists who are the very spirit of the future and of technical and scientific change. We cannot afford to let our scientists be immured in what can only be described as sterile "intellectual compartments". It may be that we will have to develop new universities, but I urge with all earnestness that we continue in every possible way to try to combine research and teaching.'[2]

THE ORGANIZATION OF TEACHING

The classic description of the teaching process—Mark Hopkins on one end of a bench, the pupil on the other—needs some modification. Today the pupil will probably have been replaced by a tape-recorder and Mark Hopkins will be either analysing his own taped lecture, or recording a contribution to a new programmed sequence.[3]

The position is scarcely so extreme in South-East Asia—the lecturer and cyclostyled lecture notes are still the basis of much university teaching: they are what students both expect and, indeed, demand. Save in physical mobility, there may be little difference between the sixth form or the final class of the *lycée*, cramming for advanced level certificates or the second part of the

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[1] On the other hand the equally important Rice Research Institute of the Philippines is directly controlled by the State university.

[2] *Unesco Chronicle*, Vol. XI, No. 1, January 1965, p. 34.

[3] Or possibly, if in England, to the Third Programme.

baccalauréat, and the first year or two in university, cramming for a pass in the first hurdle, or not cramming, and flunking out. Indeed even further study toward the degree also tends to partake of this undue emphasis on memorization and examination.

It is true that the lecture survives triumphantly—at least in the view of the lecturers—in the Hale Report,[1] where it is stated that the lecture remains the main vehicle for instruction, covering the broad scope and principles of the syllabus, the lectures being supplemented by private reading and seminars or tutorials.

The report considers it necessary to justify the survival of the lecture in some detail: thus immature students are thought to learn more readily by listening than by reading—a point of considerable interest to the region with its young students in Burma and the Philippines if, as the report assumes, the lecturer is competent to judge audience reaction and modify his lectures or his techniques of delivery to the receptivity but lack of maturity of his audience. It may not be found an easy task to reconcile this assessment either with personal experiences of the slackening of concentration after fifteen to twenty minutes or with the supreme unconsciousness of the presence of an audience manifested by some of the most distinguished academics. Other claims for the lecture are the opportunities offered for replying to questions —surely in an atmosphere not conducive to such a practice—and for clarifying scientific material which is too involved for written exposition. Lecture material, it is said, can be more easily co-ordinated with practical work than written expositions, and the use of visual aids permits the gradual and clear construction of complex forms and formulae. Again, it is suggested that in science, textbooks are frequently either out of date or non-existent, a situation with which the region is only too familiar, and one rendered even more critical through the increasing use of the national language, often a further limiting factor in relation to textbooks. With these points may be considered the more personal contribution of the lecturer, both by offering material of his own not yet available in published form, and by the reaction that his own enthusiasm or mastery of his subject may generate in his audience of students. Further, a lecture is a prepared exposition, well thought out and constructed, and therefore a better vehicle for teaching than the unrehearsed dialogue of replies to questions or a seminar, while a variety of lecturers will act as a corrective to the influence of one dominating or unsympathetic tutor.

Finally—and here at least the argument comes home—if for some purposes the lecture is a suitable vehicle for instruction, it can reach a very wide group at the cost of a single lecturer-hour.

From the other end of the bench come the comments of the National Union of Students, whose Memorandum of Evidence is appended to the Hale

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[1] *University Teaching Methods*, op. cit., p. 52.

Report.[1] The two major objections to the lecture are that the audience is passive since it does not permit a free discussion of points of interest and that too often the matter of lectures is to be found adequately covered in texts (not likely to be such a frequent occurrence within the region). Compulsory attendance at lectures, or the very organization of lectures, as a device for ensuring at least a certain amount of work from students is utterly condemned. The inadequacies of some lecturers are pointed out in some detail.

Constructively, the students welcome the exposition of the relationship between new material and the content of the course, and of new material by the scholar responsible for its discovery.

The cases for and against the lecture system are both strong, and no obvious conclusions emerge save that a system of teaching which relies solely or extensively on the lecture is likely to be far less successful than one which, whilst perhaps based on a course of lectures, also includes tutorials, seminars, directed reading, practical or field work, and a variety of techniques within the various methodologies. It is also interesting to note that the size of lecture audiences on which the views expressed above were based only ranged from 16, in the smaller civic and Welsh universities, to 20 in the case of London University, and 32 in Scotland, where traditionally it might be supposed that a larger audience for lectures would be required by an economically minded administration. The case against the lecturer might have been stronger had student groups of over 100, not uncommon in the region, been concerned. Indeed, in the investigation made for the Hale Report, between 27 and 30 per cent of the lectures were given to groups of 9 and under, and on this situation the Robbins Committee remarked:[2] 'On the whole we think that there is little virtue in formal lectures delivered to very small audiences. A lecture should be something of an occasion and, except in large universities where in a big lecture list there is room for the highly specialized lecture which only a few genuine enthusiasts will attend, time spent in preparing courses of lectures for small audiences would be better spent in giving more classes and in regular and systematic correction of pupils' own work.'

This would seem to refute the case against the large and therefore passive (save in revolt) audience, but as the Hale Committee retort, not every lecture can be an occasion. The main purpose of the criticism is to cast doubts upon the value of poorly delivered lectures, possibly repeated verbatim for years on end, which merely string together material available in the standard works recommended to students. These strictures upon the fallibility of the lecture as a major teaching tool, whilst containing useful critical pointers, have a more limited reference to university teaching in the region. In the first place the lecture has an even stronger traditional hold in the East, where students do

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1. *University Teaching Methods*, op. cit., p. 125-131.
2. Op. cit., *Report*, p. 187, para. 569.

not on the whole seem ready to permit a desire for more active methods to impinge upon the respect due to an immemorial technique. But yet more important is the vital function still to be performed by a lecturer using the national language to bridge the gulf separating students from incomprehensible foreign texts. What matters here is not the method but the ability of the lecturer to make good use of it. It is likely to be many years before this vital service becomes redundant: it needs to be supplemented rather than supplanted.

On the matter of written material issued in conjunction with lectures the Hale Report is more specific: such material may well cover data, formulae, statistics and bibliographical information. On the provision of summaries, views are more elastic: the fact that a full summary is to be avoided because it will save the necessity of the student attending the lecture is scarcely a sweeping condemnation particularly if lectures which can be so summarized are, as has been suggested, not those of value and might well be 'cut'. More important is the objection that such material is often ill-digested and subsequently regurgitated in examinations without further thought being given to it.

Discussion periods may be considered either as 'tutorials', a series of periods conducted by the same teacher and attended by not more than four students, or as 'seminars', discussion periods not limited by the specific requirements of the tutorial. The tutorial may be regarded as an exercise based upon the student—the seminar upon content: both for any degree of effectiveness depend upon previous preparation and the production of written material.

Tutorials are considered an essential part of the teaching process by the National Union of Students. They bring the student into frequent contact with a scholar able to give full guidance on the academic problems likely to be encountered, and the student is able to participate in the teaching-learning process, which he cannot do in crowded lectures.[1]

The tutorial is of course a distinguishing feature of the Oxford and Cambridge teaching system, where 14.5 per cent of hours under instruction are spent in tutorials as against an average of 3.3 per cent in the other British universities.

The standard objection to the tutorial, the closest link between scholar and student in the teaching process, is that it is wasteful in the case of the tutor's time, since it involves repetition of the basic elements of any course, and that it is extremely expensive generally in consuming staff time. These objections are made by the Robbins Committee: they are not accepted by the Hale Committee, who regard the individual treatment of each student as the essence of the tutorial, and who feel that staff time could often be secured by release from unnecessary lectures (which incidentally brings their views back somewhat more closely to those of the National Union of Students).

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[1] Not actively—but close rapport between a sympathetic audience and a lecturer can transform the effectiveness of any discourse.

That a strong *prima facie* case can be made out for the development of a tutorial system, however limited in scope, wherever circumstances in the region permit, is surely incontrovertible. In particular, the employment of such a system might do much to bridge the gulf between school and university for first-year students. Most of them have been taught rather than educated, and they either find that they have not been trained to profit from the unusual freedom of the university, or—and it is more likely—that they have exchanged one classroom for another, with the differences that the social contacts with staff afforded by school games, clubs and extra-curricular activities are no longer available on the university campus. Unfortunately the system is so dependent, not only upon staff, but upon staff experienced in, and devoted to, tutorial responsibilities, that not only does there appear little possibility of applying it to the large number of students concentrated in the first year: even a modified resort to tutorials in the final year, when they can offer an effective counter-measure to cramming for examinations, surely a most valuable deployment of staff, must exert a heavy pressure upon already strained resources.

The seminar should provide a valuable complement to the lecture, but it needs a skilful teacher to turn the often desultory and diffuse talk of a seminar to good account: even so it is often difficult to prevent two or three extroverts from monopolizing the sessions.

One of the most effective versions of the discussion group, embodying both the principles of filling out the schematic framework of lectures, involving student participation and requiring intimate contacts between senior and junior staff and the undergraduate, are the practical classes which form half the teaching time of a number of disciplines. To these should be added the field work required of students in the social sciences and all forms of geography and geology, and the biological sciences.

Practical classes (whether organized on a scheme of set experiments—the most economical organization of laboratory time—or forms of open-ended research), in addition to promoting personal contacts and student participation, also develop the manipulative skills, particularly those needed by engineers, chemists and biologists. They give a valuable training in the recording of experience, and perhaps above all the aesthetic and scientific reward of participating in a well ordered experiment.

Nevertheless the fact that the percentage of time—roughly 50 per cent—which seems unnecessarily stereotyped among many academic activities, prompts the question whether such a standard allocation for practicals within a variety of subjects is based upon evidence of necessity, or upon convenience and tradition. The familiar complaint about the inability of many scientists to express themselves with any clarity may suggest that an investigation into the optimum allocation of practical work among the various disciplines, and at various stages of the courses, is one of the many suitable fields for further study suggested in the concluding pages of this report.

Two further questions are opened by this brief review of the organization of teaching: teaching aids, and the training of the teacher.

TEACHING AIDS

The university library

Of paramount importance both as a teaching aid and also, since it is the basis of the private study of the undergraduate and the focus of research, as an essential element in any organization of teaching, are the collections of books, periodicals, documentation, data, filmstrips, microfilms, films, tapes and records either assembled in the university library, or possibly dispersed throughout the campus with a central core. Indeed 'the character and efficiency of a university may be gauged by its treatment of its central organ—the library. We regard the fullest provision of library maintenance as the primary and most vital need in the equipment of a university. An adequate library is not only the basis of all teaching and study, it is the essential condition of research, without which additions cannot be made to the sum of human knowledge'.[1] It is accordingly not surprising to note (see above, p. 181) that among the prerequisites for recognition as a private university in the Philippines is the provision of an adequate library.

It may be assumed that this importance needs no further emphasis. Within the general concept of the university library, however, lie a number of problems based upon the fundamental aims to make the collection of material as full and as accessible as possible to students, and to ensure in turn that the widest and most productive use possible is made of this most expensive asset.

In the first place it may be suggested that the library should not be required to occupy itself with the incessant demands of students for standard textbooks. These should surely be possessed by students, perhaps sold to them, new or second-hand, by a students' co-operative book shop; or loaned to them from a special textbook collection. If students cannot afford to buy textbooks they must be made available, but not on the basis of a quick circulation and at the cost of a considerable burden on library shelving and library staff time. A justification for the loan of textbooks—for a year or more—to students may be found in the saving of the teachers' time when basic ground is covered in accessible texts, and the need for detailed lecture coverage is obviated.

The nature of the library must be a matter of response to the requirements of individual situations. The major crux is usually the question as to whether there should be one combined collection of all documentation, or a central reference and research library surrounded by separate departmental collections—the obvious examples of which are scientific, medical and law libraries with their very specialized fields. A major objection to such departmental libraries is that almost inevitably they are maladministered, and they are not calculated to foster the interdisciplinary concept. One solution would seem to be the adoption of the principle that whatever the distribution of material, all administration and actual purchasing should be the responsibility of the university librarian and his staff, from which should also be drawn the staff of the departmental collections. The nucleus of information would be a union catalogue maintained in the central library. Furthermore, the problems of the storage and retrieval of data by electronic techniques which are developing into a major concern of the documentalist would be at least concentrated in one area and one group of personnel. The full and proper use of an abstracting service, such as that recently established by the Thai-Unesco Scientific Documentation Service near Bangkok, is also a type of facility which is best administered through a central channel. The possible danger of building empires for the deployment of techniques of librarianship rather than for establishing a university service can be overcome by a sparing but judicious use of committees including undergraduate and junior faculty representation.

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[1] *Report of the University Grants Committee* (London, HMSO, 1921).

Another major question that needs considerable thought is the use made by students of the library and its facilities. Apart from the general concept that the library is a source of supply for basic information it also needs to be considered as an area where (incidentally, very expensively from the point of view of optimum utilization of space) individual study and written work can be carried out, not in privacy, but at least in peace. The less adequate the residential provision of the university, the more necessary private working areas become; but it is doubtful whether experience shows that the amount of reference to the shelves entailed by such work justifies the use of library space, neat and logical though the concept of pursuing studies in close proximity to the literature would appear to be.

The proper use and care of books, the value of periodicals, speed of reference, the significance of bibliographies—all these should be as much a part of any university course as instruction by lecture, field trip, case study, tutorial or laboratory course. The task is surely one to be shared by both the relevant department and by the library: the library can issue its pamphlets and give its talks, demonstrations and guided tours on the nature and use of its facilities and the services its staff can render; the lecturer can base much of his work on further required reading: to ensure that this had been done can be one of the objectives of tutorial and seminar.

The quantitative problems are not easy to assess. Useful facts can be gleaned from figures recently submitted to the University Grants Committee

TABLE 61. An assessment of library needs

Size of university	
Undergraduate	3 000
Post-graduate	700
Staff	350
Curriculum	
Number of subjects	50
Basic stock	
Donated, or on microfilm	50 000
Purchased	200 000
	250 000
Cost of purchased stock	£500 000
Period of acquisition, basic stock (years)	10
Concurrent acquisition, books and periodicals (per year)	15 000
Cost per year	£37 500
Total size of library over ten years (volumes)	400 000
Total cost over ten years	£875 000
Comparative figures	
Reading University	
Size of library (volumes)	200 000
Insured value	£534 000
Annual expenditure on books and binding	£30 000
Leicester University	
Annual expenditure on books and binding	£35 000
National University of Australia, Canberra	
Annual acquisition grant	£(A)250 000
University of Toronto	
Annual acquisition grant	£559 500

by the Library Association,[1] but it will be appreciated that universities in the region have a formidable additional quantitative problem owing to the necessity of providing essential texts in the national language, possibly in other languages with a national circulation, and in at least one language of wider communication, and especially important publications in other languages, mainly European, but perhaps increasingly also in Mandarin. Thus the librarian in Kuala Lumpur controls a main collection in English, smaller collections in Malay, Mandarin and Tamil, and a group in Dutch. A collection of the relevant historical material in Portuguese would be of value to the university and the State; and the librarian may be expected to be faced shortly with demands for untranslated texts in French, German and Spanish!

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[1] *Memorandum of Evidence* to be laid before the Committee on Libraries set up by the University Grants Committee (London, The Library Association, 1964, mimeo).

TABLE 62. Comparative statistics for selected university libraries in Great Britain and the United States for the session 1961/62

Rank order (size of library)	University	Number of students	Total bookstock (volumes)	Number of volumes added	Total library expenditure	Expenditure per student
					£	£
1	Oxford	8 802	2 924 000	79 000	410 000	46
2	Cambridge	9 019	2 832 000	41 000	260 000	29
3	Edinburgh	6 263	689 000	21 000	130 000	20
4	Manchester	5 356	624 000	36 000	117 000	22
5	Birmingham	4 653	581 000	16 000	90 000	19
6	Glasgow	6 151	530 000	13 000	118 000	19
7	Leeds	5 248	517 000	18 000	80 000	15
22	Leicester	1 583	151 000	10 000	35 000	22
23	Swansea	1 654	148 000	9 000	36 000	22
24	Exeter	1 559	133 000	6 000	27 000	17
					$	$
1	Harvard	13 560	6 931 000	201 655	4 285 000	367
2	Yale	8 220	4 573 000	90 015	2 004 000	242
3	Illinois	31 500	3 526 000	142 436	2 592 000	81
4	Michigan	25 480	3 050 000	119 976	2 471 000	88
5	Columbia	22 280	3 026 000	86 240	2 153 000	129
6	California (Berkeley)	22 300	2 701 186	106 710	3 813 000	161
7	Stanford	9 520	2 287 332	71 323	1 606 000	169
23	Brown	3 980	1 171 000	47 410	707 000	171
24	Virginia	13 520	1 155 000	50 878	642 000	65

N.B. The figures for volumes added are approximate and must be treated with considerable caution.

Sources: *UGC Returns 1961-62* (supplemented by annual reports of libraries), and *College and Research Libraries*, Vol. 24, 1963, p. 237.

One point made by the Library Association is particularly relevant to the region: contrary to general belief, the size of the university is a relatively unimportant factor in providing total library services, the only amount affected being the cost of additional copies. In consequence, it is not altogether meaningful to calculate a *per capita* maintenance figure. Then, with all due reserves, the association suggests, as a rough yardstick, that a university with 3,000 undergraduates, 700 post-graduates,[1] 350 academic staff, and with a curriculum of about fifty subjects, would require a basic stock of at least 250,000 volumes the cost of which, allowing for 50,000 volumes acquired by gift or on microfilm, would require a capital sum of not less than £500,000: the task of acquiring such a stock might need ten years to complete (Table 61). As a supplement to these sets of figures, reference may be made to an article by the sub-librarian of the University of Southampton[1] which sets out two tables of comparative figures for selected university libraries in Great Britain and the United States giving a mathematical *per capita* figure for 1961/62 (Table 62).

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[1] An interesting assumption of balance considering the small numbers of post-graduates in the region.

An examination of these tables is largely an exercise in dimensions—it takes no account of the quality of books, of the number of duplications, or of the wisdom of purchases, though any caution exercised in estimating the influence of these factors is quite as likely to apply to Leeds as to Stanford. What the figures also do not reveal is the nature of the development of functional design and service to students which have recently stimulated so many British librarians visiting the United States. The reactions of one of them, W. L. Guttsman, librarian of the new University of East Anglia, may be found in another volume of the *Universities Quarterly*.[2]

It is scarcely to be expected, of course, that the Library Association will adopt a niggardly attitude to the acquisition of stock: even so, the figure of at least 250,000 volumes may well be considered an ultimate target rather than a standard working stock. Table 62 shows that the most reputable universities of Leicester and Exeter, and the University of Wales at Swansea, have by no means reached this total, and a working minimum might perhaps be considered as lying between 50,000 to 75,000 volumes. Even so the scarcity of many valuable texts suggests that a certain proportion of the stock will of necessity be on microfilm.

It may also be desirable to mention libraries in the technological institutes now reaching advanced levels. The Library Association memorandum[3] includes an appendix recommending standards of library provision in Colleges of Advanced Technology which include some indication of accommodation and size, based upon a central library housing 100,000 volumes for 3,000 students and 350 staff with a library staff of 15-20.[4] The annual cost of books, periodicals and binding is estimated at between £10,000 and £20,000, according to the subjects catered for: this, of course, does not include staff costs. It is of particular interest to note that the cost of the annual subscription to the 18 basic periodicals in chemistry is given as £408, and of 15 periodicals in physics as £190: translations from the Russian are excluded in both cases. The mounting number of scientific periodicals offers a standing problem in costs, binding and abstraction: for example *Chemical*

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[1] Maurice B. Line, 'Libraries for expanding universities', *Universities Quarterly*, Vol. 19, No. 1, December 1964, Appendix 1, p. 53.

[2] W. L. Guttsman, 'The university library as a workshop', *Universities Quarterly*, Vol. 17, No. 4, September 1963, p. 382-90.

[3] *Memorandum of Evidence*, op. cit., Appendix I.

[4] A figure which is considerably below that to be found in some much smaller university libraries in the region.

Abstracts, which in 1907 published abstracts from 465 journals, now monitors some 10,000 scientific, technical, trade and serial-type publications.[1]

It may be refreshing, after these scarcely encouraging statistics, to close this brief review of the significance of the university library by relating the topic with some precision to the question of university teachers: '"If you want your sons and brothers well taught, you must have teachers here who are men and learned men; if you are to keep learned men here, you must have a still and quiet place for them to read and think in; but above all, you must have books for them—not merely a standardized 50,000-foot shelf, warranted sufficient for running a university, but a library of millions of volumes, with strange books in it, out-of-the-way books, rare books and expensive books,"'[2] And finally, if this importance is attached to the library the same significance surely attaches to library staff, in respect of status, training and enrolments—scarcely the present situation in many of the universities in the region.

Audio-visual and other aids

As long ago as 1926, S. L. Pressey[3] accused education of being the most inefficiently carried on of any large-scale undertaking in the United States: this, he said, was due to a cultural barrier which inhibits the application of modern technology to the teaching process.[4]

This accusation is certainly not true of the secondary school of today, complete with language laboratories, projection rooms, public address system, television and radio lessons and a society for making films. Even in the more conservative world of the university, the Hale Report[5] solemnly records that in the sample questioned the following percentages of subject lecturers used 'visual aids': geographers, 96 per cent; biologists, 92; engineers, 82; physicists, 81; chemists, 78. At the end of the list are the conservative backbenchers: mathematicians, 24; lawyers, 23.

There is no evidence that recourse to mechanical aids has been spectacularly rapid within the region, but it may be confidently anticipated that teaching

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1. *The Idea of a New University*, p. 153; edited by David Daiches (London, André Deutsch, 1964).
2. Professor Tinker of Yale, addressing the Yale Alumni, quoted in a paper by B. S. Page on 'University Library Development' read at the Annual Conference of the Library Association, 1957.
3. *School and Society*, p. 376, quoted by L. M. Stolurow, *Teaching by Machine* (Washington, United States Department of Health, Education and Welfare, 1961).
4. If an editorial reminiscence is permitted, in the same year the introduction of 'magic lantern' slides, complete with lecturer's pointer, lantern operator and the inevitable inclusion of one slide upside down, into Cambridge tripos lectures on the history of exploration and physical anthropology was regarded as a comic turn, slides being treated with the commentaries and applause normally reserved for the less sophisticated films then to be seen at the Victoria Cinema.
5. *University Teaching Methods*, op. cit., p. 98.

could be more effective if such aids were appropriately employed—which does not imply that language departments should hasten to install language laboratories when they are mainly occupied with literature or semantics. Neither does it imply that here at last is the answer to the staffing problem.

If this is to be lightened by the employment of teaching aids it is possible that the use of closed-circuit television to simultaneous classes is likely to prove the most economical in staffing, just as it is likely to prove the most successful technique by using the best available teachers, experiments in the United States[1] indicating that the major factor in successful university teaching appears to be the skill of the teacher rather than the size of the class or the teaching techniques employed. A different value for closed-circuit television—more adequate presentation—is of course to be found in its use for reproducing the details of surgical operations, where the camera covers the whole of the area to be observed with a range possible only to the few immediate onlookers: this will have been demonstrated to any viewer who has witnessed the televising of cardiac operations released in public programmes.

It seems quite certain that television—particularly in view of new and simple techniques for reproducing telecasts in classrooms—is likely to play a considerable part in education at the second and third levels, just as the televising of programmes designed and put out by the universities is the best public relations device the university is likely to have, as well as a means at last of bringing university teaching to a truly extra-mural audience of vast size. A glance at the television aerials bristling on the thatched or tin roofs of townships throughout the country areas of the region will show that this advanced offering of technology is no prerogative of the industrialized world.[2]

Much of the potentiality of the new teaching aids remains to be evaluated and related to its most effective teaching contexts, and the region would probably be wise to wait for this extremely expensive process to be carried further before investing heavily in the more costly forms of equipment.[3] Nevertheless consideration should be given to the provision of inbuilt facilities—projection rooms, studios and wiring—when new buildings are being planned.

An equal caution may well be observed in relation to that adaptation of the Socratic dialogue to modern teaching conditions called 'programmed learning'. At the moment it seems likely that the schools offer the widest field to this method of securing student participation, conditioning the student by rewarding success, and enabling him to proceed at his own pace. There seems every likelihood that where basic information has to be learned, as in the first-year science courses, programmed texts may prove a useful aid: the success of the technique in cases where value judgements have to be assessed is not yet so clear.[1]

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[1] *Better Utilisation of College Teaching Resources* (New York, Fund for the Advancement of Education, 1959).

[2] See also 'Progress report on the use of radio and television for educational purposes', *New Methods and Techniques in Education*, p. 18-28 (Paris, Unesco, 1963. Educational Studies and Documents, No. 48).

[3] For example the body responsible for this study, the Joint Unesco-IAU Steering Committee, has instituted a study of the effectiveness of technological aids to teaching under the chairmanship of Dr. Alvin Eurich of the Aspen Foundation. The establishment of preliminary correspondence with this or with similar studies would almost certainly repay institutions within the region contemplating major developments in this field either experimentally or as a matter of accepted policy. Quite certainly such correspondence would be welcomed by the investigating bodies.

A useful warning on the cost of programming is given in the Hale Report,[2] which reports an estimated ratio of programming time to learning time of 100 : 1. A programmed text has to have a wide coverage to justify this ratio.

THE TRAINING OF UNIVERSITY TEACHERS

At the first and second teaching levels professional training brings recognition in the form of additional salary; it is also a prerequisite of promotion. There is no recognized form of training for university teaching, if one excepts the valuable but informal experience gathered empirically by graduate instructors and demonstrators. The reason for this curious anomaly is difficult to find. Presumably the incessant experience of education undergone by most university teachers—kindergarten, infant school, primary school, undergraduate course, post-graduate course, research work, lectureship, is expected to have effected a training by a form of osmosis. Writing as long ago as 1943, 'Bruce Truscot' was one of the very few to deplore this situation quite categorically, maintaining that in introducing a training course for university teachers, 'Quite apart from the efficiency of such a course, the break of a year between graduation and one's first post gives valuable time for mental recuperation and an adjustment of thought after a period of intense specialization, while the study of such new subjects as psychology, method and the history of education broadens the outlook in a way from which no specialist can fail to benefit.'[3] He also considered that it is all-important that such a course should be followed by a practical examination to establish fitness to teach and that 'no candidate ought to be accepted for any but a temporary post in a university until he had passed it'. This opinion ignores the economic consequences of requiring, at this late stage, yet another year of possibly subsidized but otherwise unremunerated work: on the Continent some such practice for full-time senior appointments is far from unusual.[4] On the other

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1. A useful introduction to the methodology of programmed texts may be found in many recent contract bridge manuals. The basic steps in play and bidding are analysed and taught progressively in frames with continual checks in the form of quizzes, on precisely the same principles, though perhaps they are not so meticulously employed.
2. *University Teaching Methods*, op. cit., para. 331.
3. Bruce Truscot, *Red Brick University*, p. 84 (London, Faber & Faber, 1943).
4. See *The Staffing of Higher Education* (Paris, International Association of Universities, 1960).

hand the National Union of Students in the United Kingdom, critical enough of lecturers, circumambulates the issue in its evidence to the Hale Committee in a curiously stilted vein:[1] 'In order to ensure that members of staff are suitably qualified to undertake teaching, it will be necessary for university departments to insist that prospective members of staff shall have shown that they are capable of performing such duties proficiently before they are appointed. For this to be a practicable proposition, it will be necessary to arrange courses in the techniques of university teaching for intending university staff. If it is not possible or it is inconvenient to arrange such courses before staff members take up their teaching duties we would recommend that they might be undertaken concurrently with the first year's teaching. It may be expected that such training will meet a great deal of opposition, but we sincerely believe that there is hardly a member of academic staff who will not admit, perhaps only to himself, that his teaching might have been better than it now is if he had been given the opportunity of benefiting from a course in the techniques of university teaching.'

To begin with, 'suitably qualified' has a specific academic connotation. Is there to be a teaching diploma for university staff? It is apparently a prerequisite to appointment, and yet it is admitted that it may have to be taken during the first year of appointment. Is this, then, to be a probationary year? *Quis custodes ipsos custodiet*? Who is to approve a pass or ordain a failure in this exercise?[2] The faith of the students in the self-analysis of staff seems unhappily misplaced—42 per cent of the staff consulted did not agree that a newly appointed teacher should receive some organized form of guidance in how to teach. Curiously enough the staff who faculty-wise were most strongly opposed (44 per cent) to initial training were the teachers in English and history—both schools heavily engaged in the much-criticized lecturing techniques, whereas the engineers, perhaps with memories of workshop days, came out fairly heavily (68 per cent) in favour of training.

In the United Kingdom one university, Nottingham, has from time to time organized, through its Education Department, voluntary courses for young university teachers, and a summer school for engineering teachers has been held at Manchester: a more extensive training programme has been carried out in the United States with the assistance of the Fund for the Advancement of Education. Apart from these activities, most forms of training are empirical—as indeed they are even in those Continental countries which have a system of probation and examination—and left to departments for internal action as they think fit, or to the consciences of lecturers with their tape-recorders, even though consciousness of sin may not result in a reformation.

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1. Op. cit., p. 129.
2. It is to be noted that probationary periods and examinations, on occasion competitive, are used for permanent staff appointments in, for instance, Italy (a national *concorso universitario* for professors, as well as university examinations for *assistant in tenure*), Germany (*Habilitation* conferred by the faculty council) and Poland (*Habilitation* or *Docent*).

It seems fairly clear that at least within the region, where the recruitment of staff is almost a process of enticement, that brilliant young men with other attractive openings available are not going, at the end of perhaps twenty years of being educated, to submit to a further year's training in a milieu with which they are intimately familiar, and doubtless they would be suspicious of the approach to the problem of teaching undergraduates likely to be adopted by a Department of Education generally preoccupied with the psychology of children and the psychometry of the educational process. Neither will they wish for an on-the-job training programme to raise unjust doubts about their teaching capacity in the minds of their students, largely unaware of the problem at issue.

The Hale Committee, after briefly reviewing attempts to deal with the problem in the United States, comes to no conclusion on the matter, but rapidly develops a proposition for the creation of a body to undertake operational research into problems of university teaching, with the duties of promoting and making grants for experiments, acting as an information centre, publishing the results of research, and organizing summer schools, workshops and seminars.

The situation discussed by the Hale Committee reveals a difficulty that is acute indeed in South-East Asia, where it may be said that most of the more successful teachers have undergone no more training than subjection to university teaching as practised in the universities of Europe and the United States, and that among the less successful—and the failure rates throughout the region seem to suggest that their number is not small—there are many who are bound by the traditional forms of mechanical lecture and cyclostyled notes.

In these circumstances the proposal to set up an inter-university body to explore teaching methods is surely not only extremely relevant to the problem of the region, but should be extended to cover problems of staff training as well, perhaps through travelling advisers and vacation courses.

It is with this need, among others, in mind that Chapter 12 of this report concludes with an outline plan for regional co-operation in the form of a South-East Asian Institute of Higher Education and Development, to the consideration of which it now moves.

12. Regional co-operation and higher education

So far this report has largely concerned itself with the identification of typical national problems and aspirations in the region, and has suggested various ways in which higher education in each country might help to meet its social and cultural as well as economic needs more adequately, indicating the implications of alternative policies and practices. The desirability for regional co-operation in meeting many of these needs has frequently been referred to and sometimes stressed, but its potential and future outlook remain to be examined as a whole. Politically this outlook is bleak, but recent advances in achieving economic collaboration give some ground for optimism: if these are reinforced by co-operation in higher education a way may yet be found to resolve political barriers and conflicts.

Writing of the political scene in Asia, Daniel Wolfstone[1] commented: 'Indeed we are now beginning to witness the embarrassing transition from the 1945-60 phase of Asian nationalism, when it was able to appear pure and idealistic, to the post-1960 period when individual Asian nations are becoming increasingly involved in situations where their separate nationalisms conflict.

'When Asia was new to the idea of modern nationality and all its consequences (from the patrolling of distant borders to the protection of infant industries) it was possible to pretend that Asia was above the petty manifestations of this "European" idea.

'But this illusion did not stand the test of reality. When national interests within Asia began to conflict—India's and China's over the border and the border peoples, Burma's and India's over the *chettiyar* moneylenders, Malaya's and Indonesia's over the Borneo States, Pakistan's and India's over

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[1] D. Wolfstone, 'Asian commentary', *Far Eastern Economic Review*, Vol. XLVII, No. 1, 7 January 1965, p. 11.

Kashmir, Cambodia's and Viet-Nam's over alleged mutual assistance to rebels—Asian States reacted just as childishly, as pettily, as narrow-mindedly as the European States did before 1945.'

Thus, apart from various bilateral trade and cultural agreements between Asian States, even sub-regional attempts at promoting politico-economic co-operation have so far made little headway. President Macapagal's Maphilindo scheme, vaguely based on the idea of the unity of the Malay people, ran aground on 'confrontation' and Malaysia-Philippine disputes concerning Sabah. The Association of South-east Asia (ASA), started in July 1961 to promote economic and cultural co-operation between Malaya, Thailand and the Philippines, achieved some concrete results in 1962 and 1963—including agreements on student exchange as well as on collaboration in air travel, radio and television programmes, trade, and on possible joint action in the development of industry. But Malaysia-Philippine differences over Sabah subsequently largely disrupted the future of ASA, which President Macapagal in May 1964 described[1] as being in 'a [illegible] of suspended animation'. SEATO, in addition to encountering difficulties between its own members, is by its very nature not in a position to gain the co-operation of non-members in the region. Indeed, only the Philippines and Thailand are full members,[2] Viet-Nam is a 'Protocol State', and Cambodia in April 1964 asked that it be excluded from that category.

On the other hand, in the wider context of the Asian region, the adoption of the 'Manila Resolution' on Regional Economic Co-operation in March 1963 showed unanimously emphatic agreement on the need for such co-operation, and a follow-up meeting at ministerial level of representatives from twenty-one countries at Manila in December 1963 drew up a programme to bring about co-operation in six fields of economic action.

Further substance to these proposals was given by the findings of the Conference of Asian Economic Planners, whose second session was held at Bangkok in October 1964. The conference agreed that greater regional co-operation in the field of development planning was a matter of urgent concern to all ECAFE countries, and that this should in the first instance be facilitated through timely, full and continuous exchange of information and experience concerning the drafting of future development plans and modifications in programming. Recognizing the practical difficulties that arose because any significant degree of policy co-ordination was bound to affect some national objectives, it was suggested that the proper course of action might be initially to select those fields or sectors where a community of national interests prevailed. The conference also felt that planners should look beyond the temporary political difficulties that stood in the way of co-operation and prepare comprehensive studies of possible forms of co-operation on a long-term basis. Faith in the imperativeness of such co-operation was as much necessary for success in that endeavour as detailed and painstaking work.'[1]

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[1] *Far Eastern Economic Review*, Vol. XLIV, No. 8, 21 May 1964, p. 372.

[2] The others are the United States, the United Kingdom, France, Australia, New Zealand, and Pakistan.

Still, this could be taken to be no more than an effusion of pious pronouncements, particularly when it is considered that there is as yet no concerted attempt to utilize the region's resources to meet its great fertilizer needs, that plans for oil refineries pay no heed to the idea of specialization, that many consumer industries, particularly textiles, are showing signs of cut-throat competition within the ECAFE region, and that even where food is concerned, notions of national autarchy supplant considerations of regional collaboration that could achieve mutually advantageous agricultural diversification. Nevertheless there remain several concrete projects and technical assistance and training schemes that amply prove the possibility as well as the desirability of co-operation—the Mekong Project, the Asian Highway, the Colombo Plan, the ECAFE Asian Development and Planning Institute, the co-operation between institutions of higher education being promoted by the Association of South-East Asian Institutions of Higher Learning, the Unesco Regional Centres, studies and seminars, and the various regional workshop, survey and technical assistance programmes of FAO, ILO and WHO.

It is well to recognize that it is neither practicable nor desirable to try to cast all regional co-operation in any simple mould. Even in higher education, where there is reasonable ground for various forms of co-operation specifically related to the region, the desirability of training centres serving a wider range of countries cannot be ignored. It is thus not possible to start from a geographical concept of regionalism, and proceed to fit all co-operation to it; the varying objectives, resources, and practical requirements for each sphere of international action must also determine the nature and number of co-operating countries. Nor can political divisions be set aside entirely, although, where desirable from the socio-economic viewpoint, the machinery set up for collaboration between, say, three or four countries should be so designed as to facilitate circumventing such divisions.

EXAMPLES OF REGIONAL CO-OPERATION

The example of progress achieved with the Mekong Project is an encouraging illustration both of how political differences may be overcome by common economic interests and how sub-regional co-operation supported by international aid can yield effective and growing results. This project, affecting the four neighbouring countries of Cambodia, Laos, Thailand and Viet-Nam, was set up in 1957 to develop the water resources of the lower Mekong basin through the generation of hydro-electric power, irrigation, flood control and

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1. *Economic Bulletin for Asia and the Far East*, Vol. XV, No. 3, 1964, p. 87 (Bangkok, United Nations, ECAFE).

drainage, navigation improvement, and watershed management. After initial set-backs, largely due to political factors, the first five-year programme of investigations was virtually completed in four years and a second $23 million five-year programme was established in 1963. At the same time work has been progressing on a series of projects: construction has advanced on five major dams—two in north-eastern Thailand, one in Cambodia and two in Laos; various navigational improvements were introduced in Viet-Nam; preparatory investigation was nearly completed on another dam near Vientiane in Laos, and by the end of 1964 some $52.5 million had been pledged to finance the projects, of which 40 per cent came from the four countries concerned. More than forty national teams and hundreds of foreign experts were assisting in the implementation of the scheme under United Nations sponsorship.

The achievements of this major project in the face of many hazards, most of them political, afford a valuable illustration of the fact that self-interest is a dominant incentive in promoting assistance for regional projects. This is surely not altogether unreasonable; there are worse components than a substantial materialism in the foundations of corporate structures.

The imaginative project of an International Asian Highway has made such progress in recent years that it was estimated that by the beginning of 1967 it would be possible to motor on sealed roads all the way from Singapore to Europe, with connecting links through Cambodia and Thailand. The Highway project taken up in 1958 is eventually to cover some 55,000 kilometres, including eleven international priority routes and twenty-nine other national routes. Priority Route No. 1 is to run from the Turkish border through eight countries to Saigon, covering more than 9,000 kilometres. Priority Route 2, starting at the Iraqi border and terminating in Singapore, will cover more than 10,000 kilometres, and eventually is to have an extension that will run through most of Indonesia.

The Colombo Plan for Co-operative Economic Development in South and South-East Asia started in 1950 to assist the people to attain better standards of life. Beginning as a Commonwealth project, it now has twenty-two members—including from outside Asia, Australia, Canada, New Zealand, the United Kingdom and the United States—and at its 1964 Sixteenth Meeting, held in London, the Consultative Committee again agreed that the Colombo Plan should be extended for a further period of five years from 1966 to 1971.

Apart from the provision of loans, grants and equipment in aid of development under the plan—to which various other agencies, including the United Nations Special Fund, IBRD, and the International Development Association, have also contributed—the importance of technical co-operation in the fulfilment of the Colombo Plan has been recognized from the beginning. The objective has been to provide suitable machinery for the exchange of technical knowledge and skills between participating countries. Whilst this is achieved mainly through bilateral negotiations between the countries of the area and the more technologically advanced members, co-ordination is provided by a council at Colombo, known as the Council for Technical Co-operation, on which participating governments are represented. There is also a small secretariat known as the Colombo Plan Bureau which is also located in Colombo and reports to the council.[1]

TABLE 63. The Colombo Plan: number of trainees and experts and expenditure

Years	Training places[1]		Experts[1]		Equipment	Total expenditure
	Persons[2]	Expenditure	Persons	Expenditure		
		$ million		$ million		$ million
1961/62	4 529	19.7	1 008	32.0	48.9	100.6
1962/63	4 433	19.5	870	39.8	59.2	118.5
1963/64	4 551	17.6	948	39.2	45.1	101.9
1950-64	33 046	116.7	5 981	194.9	195.6	507.2

1. In 1963/64 the greatest demand both for experts and training places lay in various educational fields. In the case of experts this was followed by the following main categories of needs: engineering; transport and communications; administration; food, agriculture and forestry. Training places were sought in administration; food, agriculture and forestry; medicine and health; transport and communications.
2. New training places provided under the plan, so that at any one time during 1962-64 there were really 6,000 men and women undergoing training under the technical co-operation arrangements.

Out of a total aid of $13,820 million provided between the inception of the plan and 30 June 1963 (including technical assistance, loans, grants, provision of agricultural commodities and the supply of equipment), $405 million were allocated for technical assistance, of which 24 per cent was spent on trainees, 39 per cent on experts, and 37 per cent on technical equipment. In 1963/64 about $102 million were spent, bringing this total to $507 million, making additional provision for 948 experts and 4,551 training places and providing additional technical equipment. Table 63, taken from the twelfth and thirteenth annual reports,[2] shows figures and trends for 1961/62, 1962/63, 1963/64 and for the whole period of the plan, 1950-64.

While countries within the plan region bear the major responsibility for projects, so that 'in considering the achievements of the Colombo Plan it is important to stress that by far the greater part of the effort that goes into its execution is provided by countries of South and South-East Asia',[3] and several of these countries have been helping each other with technical assistance, there is still, despite political difficulties between some neighbours, considerable room for expanding such mutual assistance. Thus the Consultative Committee of the plan in November 1963 'endorsed the recommendations of a Working Party set up by the Council for Technical Co-operation in April 1963 to examine proposals for the expansion of intra-regional technical training facilities, invited the Council for Technical Co-operation to implement the recommendation regarding the early appointment of an adviser and suggested that the governments of the region should be asked to designate local liaison officers as a matter of urgency'.[1]

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[1] *The Colombo Plan for Co-operative Economic Development in South and South-East Asia, Twelfth Annual Report of the Consultative Committee*, p. v (Bangkok, 1963).

[2] ibid., p. 12-14, and from the *Thirteenth Annual Report*, p. 304-5 (London, November 1964).

[3] *The Colombo Plan*, p. 11 (London, Central Office of Information, July 1964).

In addition to its specialized regional seminars and studies (including such joint ventures as the study of current developments in food and agriculture by a Joint ECAFE/FAO Agriculture Division and the Conference of Asian Statisticians at Bangkok in June 1963 organized together with the United Nations Statistical Office in New York), ECAFE, under the mandate received from its 1963 Manila Session, inaugurated an Asian Institute for Economic Development and Planning at Bangkok in January 1964. Autonomous, but functioning under the aegis of ECAFE, the institute has a nine-member governing council under the chairmanship of ECAFE's Executive Secretary. It is financed mainly by the United Nations Special Fund, but one-third of a five-year budget of $3.3 million is guaranteed by participating governments. Some twenty-four of these have already pledged contributions, particularly Thailand, as the host country. It provides training courses for government officials engaged in development planning, offers advisory services, and serves as a regional centre for research into economic development. In its first year of operation thirty middle-level officers concerned with economic planning in fourteen Asian countries took part in training courses, which included a six-month general course on development problems and policies; a three-month advanced course on techniques of planning; and short-term courses in such fields as development planning, manpower planning, and budget programming. The full-time staff is assisted by officials of the ILO, the International Monetary Fund, Unesco, and the World Health Organization. Housing for the institute has been provided on the campus of Chulalongkorn University.

Most of Unesco's educational work in South and South-East Asia will continue to be channelled through its Regional Office for Education in Asia, but brief mention must also be made of three regional institutes—on which the 1965/66 Programme and Budget of Unesco is to continue to concentrate its educational assistance in Asia—and the South-East Asia Science Co-operation Office—all established by national governments with the assistance of Unesco.

The Asian Institute of Educational Planning and Administration at New

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[1] *Twelfth Annual Report of the Colombo Plan*, op. cit., p. xv.

Delhi was established in 1962. It provides training courses for educational supervisors and carries out research into educational planning. Participants came from eleven countries, including Cambodia, Indonesia, Laos, Malaysia, the Philippines, Thailand and Viet-Nam, to its second course (bilingual, French and English) extending from November 1964 to February 1965.

The Asian Institute for the Training of Teacher Educators at Quezon City in the Philippines, established in 1962, received participants from nine countries, including Indonesia, Malaysia, the Philippines, and Thailand, for its third training course. By the beginning of February 1965, thirteen Member States had nominated 'associated institutions' in their countries.

The Asian Institute of School Building Research established at Bandung in Indonesia, in 1962, has functioned in close association with the United Nations Regional Housing Centre and in consultation with ECAFE. The research and information services of the institute are designed to include comparative studies on the planning of educational buildings, their design and construction, their maintenance and equipment, the use of local materials and labour, and the development of planning procedures for their design and erection. The institute's first three-month training course, September to December 1964, was attended by participants from six countries, including Indonesia, the Philippines and Thailand. The main objective of this and future training courses is to help the governments concerned to establish or improve national research and training centres on educational building.[1]

The South-East Asia Science Co-operation Office in Djakarta was designed —as similar offices in other regions—to assist in the development of scientific and technological research, education and planning, through regional information services and seminars. It also bears regional responsibility for promoting science teaching at the university level and, in particular, endeavours 'to accelerate and upgrade the training of scientists and engineers in developing countries', according to Unesco's 1963/64 programme resolution 2.332 concerning 'Aid to scientific and technological teaching at university level', in collaboration with competent national and international governmental and non-governmental organizations: '(a) by conducting comparative studies of different systems of education for the training of scientists and engineers, including curricula, laboratory equipment, teaching methods and organization of faculties; (b) by promoting the production and utilization of new source books in the basic sciences and other teaching aids and their adaptation to university education; (c) by establishing in appropriate universities, pilot projects for testing new methods and techniques in science teaching; (d) by supporting international and regional post-graduate training courses and seminars established by Member States in selected branches of science and technology; (e) by organizing, or collaborating in the organization of, international and regional conferences on basic science teaching; (f) by sponsoring internationally known scientists as visiting lecturers at selected universities. . . .'[1]

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[1] With Indonesia's withdrawal from the United Nations and its Specialized Agencies in 1965, the future of the institute is uncertain and the Science Co-operation Office has had to change its location. Thus, even as some progress is made in regional collaboration, the disruptive influence of political factors is once again brought home.

RECOMMENDATIONS FOR THE UNIVERSITY TEACHING OF BASIC SCIENCES

Under the joint auspices of the Djakarta Office and the Philippines National Commission of Unesco, a Regional Meeting on the Teaching of Basic Sciences in Universities of South-East Asia was held in Manila in November 1961, in which, among others, the following proposals for regional co-operation were put forward:

1. Hold the Manila type of meeting regularly and, if possible, at annual intervals, in accordance with one or more of the following patterns: (a) confined to a single branch of science upon any single occasion; (b) including in each delegation one member from each branch of the major basic sciences, thus permitting the holding of both primary and special sessions; (c) smaller meetings of narrower scope leading up to less frequent meetings on a large scale.
2. Disseminate information through the Science Co-operation Office, including such data on the teaching of sciences as curricular content and course organization, methodology of teaching, status and development of science education, textbooks for science teaching in Asia, sources of materials and books for science teaching.
3. Encourage and facilitate (a) the exchange between Member States and their scientific institutions of specimens and examples of local products and natural resources for the purposes of teaching or research, and (b) the local production and exchange of materials—e.g., chemicals which are rare, difficult to prepare or costly to procure—and the organization of regional schemes for storage and despatch.
4. Encourage, facilitate, sponsor and organize courses in leading universities of the region, upon a regular and integrated plan, providing opportunities for training and study in summer schools and the like periodically or continuously (especially technician courses and academic courses of a refresher type for secondary-school science teachers and university science staff).
5. Sponsor and collaborate in setting up regional or national scientific centres: (a) service centres, including, for instance, micro-analysis and spectrographic analysis; (b) centres for research and advanced training, including provision for post-graduate students as well as for scientific workers and their further training; (c) instrumentation centres.

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[1] *Approved Programme and Budget for 1963-1964*, p. 207 (Paris, Unesco, 1963).

EDUCATIONAL STUDIES

Among its other functions to help co-ordinate Unesco education programmes in the region and organize regional seminars (e.g., a Technical Assistance Seminar on Investment in Education, in Bangkok, 7-15 April 1964, and a meeting of experts on Improving the Quality of Education in Asia, in Manila, 21-28 April 1964), the Regional Office for Education in Asia has also had special responsibility for co-ordinating studies and making preparations for the Third Conference of Ministers of Education of Asian Member States, convened by Unesco in association with ECAFE in Bangkok from 22 to 27 November 1965.[1] It will be recollected that a second meeting of Ministers of Education of Asian Member States participating in the Karachi Plan, held in Tokyo in April 1962, examined the plan in relation to over-all educational planning and to national plans for economic and social development, and in doing so pointed out the need for extending the Karachi Plan beyond the primary level of education, since the improvement and extension of secondary and higher education is an integral part of over-all educational advancement. The Tokyo meeting also agreed that each one of its Member States should, for the next meeting of ministers before mid-1965, prepare a plan covering all levels of education, integrated into the framework of national plans of economic and social development, extending up to 1980. In this connexion, it was recommended that Unesco should assist each country, upon request, to prepare a draft national comprehensive educational plan: these, considered together, would form the basis of a draft Asian model to be examined by the 1965 meeting of Asian Ministers of Education. To this end, Unesco provided the services of two Regional Advisory Teams for Educational Planning in Asia, with responsibilities divided between countries where English or French was the main language of wider communication. Each of these teams was made responsible for the preparation of long-term educational projections for planning in accordance with the following terms of reference: '"(a) To establish, in close co-operation with the national authorities and in accordance with objectives and targets as set by them, long-term projections till 1980 to over-all educational development (educational pyramid) covering all types and levels of education, within the framework of national perspective plans of social and economic development. The *minimum* educational pyramid will be the one that could be attained with available present and anticipated national resources; the *maximum* pyramid will be the one that could be attained with concerted use of all foreign assistance to supplement national resources. (b) To suggest, for each country, if necessary, tentative targets to be achieved by 1980 in the field of education (educational pyramid) taking into account, as far as possible, future trained manpower needs and financial implications, as well as the cultural and economic objectives as desired by the countries themselves." '[1]

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[1] The director of the present study was invited to participate in the final stage of the preparation of the working papers for this meeting, a further and important link between the work of the study and of the Unesco Regional Office and its regional advisory teams, whose country reports were made available to the study as they were drafted.

As is pointed out in the Preliminary Draft Report of the team which visited the Philippines,[2] while these terms of reference may and have been somewhat differently interpreted by the two travelling teams, they do 'exclude any study of the quality of education. The content of education and its administration and methods, which obviously enter into any educational planning, are therefore outside the scope of the present assignment'. Thus, while in most reports the problem of quality is brought up and, to varying extents, stressed, its financial as well as organizational implications are left largely untouched.[3] A typical study plan for each of the teams includes:

A. (*English language team*)
I. Education pattern in the country concerned.
II. General approach and methodology of the report.
III. Financial resources and enrolments, including reference to the economic situation and problems; estimates of resources for educational expenditure; future costs and enrolments.
IV. Educational projections, minimum and maximum, including general demographic projections as well as those for education at all levels, but taking account of the need for teachers only at the primary and secondary levels.
V. Cost of educational projections based on estimated cost per student by level of education.
VI. Summary, concluding observations, and a methodological appendix.

B. (*French language team*)
I. Demographic situation—current trends and population projections, 1960-80.
II. The school system (including references to higher education and, in some cases, problems of quality and distribution between vocational, technical and general secondary and higher education).
III. Economic survey and trends, including general manpower assessments: projections are recommended, but not calculated, owing to lack of adequate data.

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[1] *Long-Term Projections for Education in the Republic of the Philippines*, p. i (Unesco, Bangkok, September 1964, mimeo).

[2] ibid., p. ii.

[3] Thus in the report on Cambodia, after stressing the need for quality, the future costs of higher education have nevertheless been set *below* current expenditure on the assumption that increased enrolments, as in the case of the vocational field, would provide better use of facilities. But this assumption, it is also pointed out, is based only on academic education: 'the development of higher scientific and technical education will necessitate more extensive equipment and possibly higher costs'—how much, is not considered.

IV. Educational finance, including costs of vocational and higher education.

V. Projections of admissions, total enrolments, and output at various levels: minimum projections with constant costs, maximum projections with increased recurring costs,[1] and maximum projections with constant costs; projections of the number of teachers needed for primary and secondary schools in accordance with minimum and maximum projected enrolments.

VI. Summary, conclusions, and methodological appendix.

In the reports it is repeatedly stressed that, in view of the inadequacy of data, the projections only indicate a preliminary determination of the orders of magnitude involved: this should form a basis for further study, evaluation and appropriate adjustment. As in the present report, the need for comprehensive manpower studies is repeatedly emphasized. Attention is also drawn to the implications of social and cultural aspirations, but the quantitative assessment of these does not go beyond that of increased cost of expanded access to education, and therefore larger enrolments at all levels of education.[2]

CULTURAL AND EDUCATIONAL PROGRAMME OF SEATO

Under its Cultural Relations Programme SEATO, in addition to offering post-graduate scholarships for study abroad in Asian SEATO countries,[3] in January-February 1961, sponsored a Conference of Heads of Universities at the University of Karachi, and in November 1961 a Commission on University Equivalences. Participants at the conference, in addition to those coming from Laos, the Philippines, Thailand, and Viet-Nam within the region, included others from Pakistan, Australia, France, New Zealand, the United Kingdom, the United States, with observers from a number of foundations. Included among other items of the agenda were: 'Methods to achieve a closer association of universities in South-East Asia'; 'South-East Asian studies'; and 'Problems of equivalence'.[4]

On the first question, discussion and resolutions adopted emphasized that 'the movement both of students and teachers between countries, and especially between the universities of South-East Asia, should be regarded as deserving the highest priority for promoting international understanding and development. It should be encouraged in every possible way, and adequate finance for this purpose should be made available by all interested governments and organizations'.[1] This should be supported by the establishment of chairs for visiting professors, and supplemented by mutual exchange of information, documentation, publications, and, most important, by efforts 'to raise the standards of scholarship in the universities of South-East Asia, so that in the future their attraction, to visiting students and teachers, would equal that of the universities of the West'.

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[1] Due to rising unit prices rather than the provision of more and better facilities per student.

[2] The Final Report and background documentation (including a specially prepared summary of this report) of the Bangkok Meeting (November 1965) relying considerably on the data collected and evaluated by the teams, provides a well-defined quantitative and financial background against which the situations and needs described by this report will have to be set.

[3] See *Post-Graduate Studies in Asian SEATO Countries. A Guide for Applicants for SEATO Post-Graduate Scholarships* (Bangkok, SEATO, 1963).

[4] *Report of the Conference of Heads of Universities, University of Karachi, Karachi, January 25-February 1, 1961, Sponsored by the South-East Asia Treaty Organization* (Bangkok, 1961).

The second item, which included the question of language problems in education in South-East Asia, led to the following conclusions:[2]

1. 'There is a need for the study at an advanced level of South-East Asian languages in the universities of the area. This need can be met in one or several of the following ways: (a) by the establishment of an Institute of South-East Asian languages in a suitable place, e.g., Bangkok; (b) by the establishment of centres of higher language study in each of the countries of the area; (c) by the encouragement of appropriate language studies in the universities of the area; (d) by the use of student and staff exchanges as a means of encouraging advanced language study.
2. 'That SEATO arrange at an early date for a study to be made by an expert linguist on the possibility of establishing: (a) an institute of South-East Asian languages in a suitable place, e.g., Bangkok; and (b) centres of higher language study in each of the countries of the area.'

(Most delegates were inclined to favour the latter approach with 'the view that what was required was a general improvement in coverage and depth of language study in each country, rather than concentration on any one'.)[3]

In examining problems of equivalence, considerable stress was laid on the distinction between formal eligibility for admission to a university and actual acceptance, which should rather be based on individual contacts and negotiations between institutions. This conference, however, recommended that 'in the forthcoming financial year, SEATO convene a Study Group made up of educational experts from the SEATO Asian member countries and advisers from other SEATO countries or international university associations, for the purpose of visiting universities in the area; this Group should make a comparative study of entrance requirements and equivalence of degrees; it should also make recommendations for whatever course of action it would consider advisable to facilitate the exchange of students. Its report should be made available to the next Conference of Heads of Universities'.[1] This, it was proposed, should be held every two years.

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[1] ibid., p. 5-6.

[2] ibid., p. 17, 18 and 20.

[3] Noss has a significant section on regional co-operation in the development of national languages. He points out the affinities between national languages in three pairs of countries, Indonesia and Malaysia, North and South Viet-Nam, and Thailand and Laos, and suggests that the efforts of scholars may be able to join forces over the most forbidding of political barriers. The present tendency appears to be an attempt to break down the existing affinities by artificial vocabulary distinctions, but a more lasting and effective factor is likely to be the development of a shared literature and it is perhaps not over-optimistic to see an ultimate possibility of shared academic fields, the exchange of teachers, and common elements in scholastic curricula.

Following up the recommendation of 'equivalence', a Commission on University Equivalences sponsored by SEATO undertook a series of comparative studies of courses in various universities of the region. In a paper concerning 'The Equivalence of Degrees Conferred by the Universities of Pakistan, the Philippines, and Thailand', presented to this commission by Dr. Enrique T. Virata, executive vice-president of the University of the Philippines, it was observed that 'the main task of this Commission is "to find ways and means (e.g., through bilateral and multilateral agreements, or by unilateral steps aiming at a harmonization of rules, standards and practices) to solve the difficulties raised by the discrepancy of, or merely the uncertainty about, university entrance requirements in the various countries of this region. To encourage the admission to universities in each of these countries of foreign students desirous, (a) either of earning a degree in his host university, (b) or merely of spending a certain period of study in this institution with the ultimate purpose of earning his degree after his return to his parent university" '[2] Subsequently, a draft agreement concerning equivalences between universities in Pakistan, the Philippines, and Thailand was drawn up and accepted in September 1965 by the governments concerned.

Established by royal decree in July 1959 at Bangkok, the SEATO Graduate School of Engineering aims to provide 'advanced engineering courses of the highest standards through: (1) regular programmes leading to the degree of Master of Engineering and (2) research by students, faculty and research staff members, and qualified students'. Scholarship awards are available to students who are nationals of any one of the following countries: Brunei, Burma, Cambodia, Ceylon, India, Indonesia, Laos, Malaysia, Pakistan, Philippines, South Viet-Nam, or Thailand.

The objectives and philosophy of the institution state that: 'The school was established in order to help meet the growing need for advanced engineering education in South-East Asia. It was founded within the region in order to circumvent the general necessity of sending students to institutions in Western countries where the emphasis of post graduate engineering education is usually inappropriate for application to the problems of the region. In Bangkok, studies can be illustrated by examples near at hand and research can be directed towards the solution of problems within the region.'[3] Liaison in

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1. *Report of the Conference of Heads of Universities*, op. cit., p. 20.
2. *Commission on University Equivalences* (Bangkok, SEATO, 1963, mimeo. CUE/63/D-1).
3. *SEATO Graduate School of Engineering, Catalog for 1964-65—Announcement for 1965-66*, p. 1 (Bangkok, Chulalongkorn University, 1964).

Thailand is through Chulalongkorn University; and the United States, through the Colorado State University, has provided most of the faculty, and funds for certain expenses; the United Kingdom has provided most of the equipment and also a few staff members. The school offers graduate students two-year courses organized on a grading system, and requiring the submission of a thesis involving research, in the fields of hydraulic, public health, structural and transportation engineering. Table 64 shows the distribution of applications and acceptances for admission from 1959 to 1964.

TABLE 64. Applications for admission and acceptances at the SEATO Graduate School of Engineering, 1959-64

	Applied	Admitted
South-East Asian countries		
Burma	6	0
Cambodia	3	0
Indonesia	2	0
Malaysia:		
Malaya and Singapore	31	8
Sabah	1	0
Sarawak	1	0
Philippines	83	43
Thailand	319	132
Viet-Nam	10	0
TOTALS	456	183
Other countries		
India	61	8
Pakistan	171	40
Taiwan	53	4
U.S.A.	1	0
TOTALS	286	52

Twenty-seven M.Eng. degrees were awarded in 1964, twenty to students from Thailand, three each to students from Pakistan and the Philippines, and one to a student from Taiwan. Although this is a new institute whose first degree awards were made in 1961, both sets of figures offer a poor omen for regional co-operation in higher education as well as a sad commentary on the standard of engineering graduates. The difficulties and disappointments of recruitment experienced by such an institution with its facilities for both post-graduate studies and research—facilities only too rare—available on the most generous terms to students throughout the region, whose scholarships include such items as air passage, subsistence allowance, tuition, textbooks, research equipment and thesis expenses, should be a matter of considerable concern to those responsible for higher technical education in the region.

REGIONAL ECONOMICS LIAISON CENTRE

The only regional attempt to set up machinery for exchange of information within a major discipline, the Economics Liaison Centre at Singapore, came at least to a temporary end after seven years of operation in December 1964. The centre was set up at the end of 1956 following a Conference of Heads of Economics Departments held at the University of Singapore, with participants coming from the universities in Burma (Rangoon), Hong Kong, Indonesia (Djakarta and Jogjakarta), Singapore, the Philippines (Manila), Thailand (Bangkok), and Viet-Nam (Saigon and Hué). The object of the centre was to disseminate information about economics teaching and research in South-East Asia, and it helped to do so by publishing an occasional bulletin (a total of forty-two in seven years). Initially financed first by the International Economic Association and then by the Asia Foundation, when the centre tried to become self-supporting it found, according to the last issue of the *Bulletin*[1] that 'although the recent questionnaire sent out has been answered by the majority of readers, and although these have almost unanimously agreed to pay a small subscription fee to the centre, the income that could thus be obtained would not be sufficient to maintain the centre'.

Furthermore, while answers to this questionnaire indicated that 'there is great interest in research work and in unpublished research in the various universities'[2] and 'results of the past seven years have shown that economics departments in the region can be approached to work co-operatively in a common cause', it also did not prove possible to implement the original idea to move the headquarters of the centre every few years to another university in the region: 'so far no university has felt able or willing to take on this responsibility'.

The situation is ultimately indicative of the insufficiency of government financial support for research work at universities, for otherwise, given their interest, the large number of economics departments in the region should surely have quite easily been able to afford adequate contributions to maintain the centre. National administrative procedures as well as exchange difficulties probably also enter into the picture, but in so far as governments do not help universities and their departments in overcoming these, they are scarcely acting in the interests either of the advancement of learning or of their own national interests. Clearly similar organizations in other major disciplines, whether in a centralized or decentralized form, could render great service in the development of higher education and research within the region.

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1. Liaison Centre for Economics Departments in South-East Asian Universities, *Bulletin* No. 42, Winter 1964, p. 1.
2. ibid., p. 1.

In the field of economics, the *Bulletin* proposes that another conference of heads of departments should be convened and that this should, among other things, consider ways of continuing the Liaison Centre. The implementation of this recommendation might be facilitated through the Centre for Economic Research in Malaysia, which was in the process of being established at the University of Singapore at the beginning of 1965; for one of its main stated aims is 'to provide a means of co-operation among research workers in the region, through the organization of seminars and similar meetings for the interchange of ideas and of research problems'. One might indeed wonder whether such an aim should not characterize all centres of research if they are to be true both to their national and their universal purpose. When it does, it will become relatively easy to circumvent various administrative and political obstacles in the way of academic collaboration.

ASSOCIATION OF SOUTH-EAST ASIAN INSTITUTIONS OF HIGHER LEARNING

The attempt made by this report to view higher education within the region as a whole has revealed both the many obstacles to carrying out such a survey and a number of developments which will nevertheless only become possible if regional concepts can be fostered. This may well seem a remote aspiration in view of existing political tensions, but as this chapter has shown, even in these confused circumstances regional projects, or at least internation projects within the region, have been undertaken with some success. It does not require a blind faith to believe that the universities, with the ever-widening diffusion of their own influence and that of their alumni, could play a growing and indeed a major role in relieving political tensions and in converting missiles into computers.

If this is so, the first need is to extend and strengthen the bonds which should unite the institutions of higher education in South-East Asia both with one another, and with the international world of scholarship.

The need for such an activity within the region has long been recognized, and in 1956 a conference attended by distinguished representatives from the universities of Ceylon, Hong Kong, Indonesia, Malaya (at Singapore), the Philippines, Rangoon, the National University of Viet-Nam (then at Saigon) and Chulalongkorn University (Thailand) established the Association of South-East Asian Institutions of Higher Learning which is subsequently referred to as the Association, or, in accordance with its own practice, ASAIHL. ASAIHL was founded, with a constitution drawn up after consultation with the International Association of Universities, with the following objective: 'by the exchange of information on educational and research programmes of the institutions of higher learning in South-East Asia, and by suggestions for co-operative action in the development of those programmes, to promote the economic, social, cultural and civic welfare of the peoples of the area more efficiently and effectively'.[1] The Association is also to foster an exchange of teachers and students among its members in furtherance of cultural co-operation and understanding.

In order to promote action towards these ends ASAIHL has held five regular general meetings and several meetings of its Administrative Board, as well as specialized seminars. A bulletin has been circulated from time to time, a handbook of South-East Asian universities is being prepared, and contacts are maintained with the International Association of Universities and other university organizations in India and Europe. The Thai secretariat of four (headed by the executive secretary, Professor H. H. Prince Prem Purachatra) is based at Chulalongkorn University in Bangkok.

At the Fifth General Conference in December 1964, 16 universities were represented by 43 participants, 29 of whom, as might be expected, came from 6 Thai universities.

In addition to the 16 institutions here represented a further 13 institutions were listed as members in 1962, of which 10 had subscriptions outstanding for periods ranging from one to six years.

The Annual Report of the Association affords a useful perspective of its activities. Five seminars were held during an unusually active year, on University Organization and Administration (27 participants); on Customary Law in South-East Asia (12 participants); on Philosophy in South-East Asia (10 participants); on Mathematical Education (no details of participation); and on Library Science (20 participants, 13 from the host country, Thailand). Earlier seminars on South-East Asian Languages and on Fine Arts had each attracted 18 participants. Future plans include seminars in 1965 on the Role of Universities in Social and Economic Development in South-East Asia; on Agriculture and Veterinary Science; on the Role of Universities in Human Resource Development, and—a most encouraging excursion into new fields—on Engineering and Technological Sciences. In 1966 follow-up seminars on the original meetings on Mathematics, Sociological Jurisprudence and the Teaching of Philosophy are to be held, together with studies of new topics—Language Problems in South-East Asian Universities, and the Role of Universities in South-East Asian Society. The reports of two seminars were published during the year, and work continued on a proposed handbook of South-East Asian universities, in which the usual difficulty of extracting information from member organizations was experienced.

Relations were established with the Organization of Rectors and Vice-Chancellors of European Universities, and the executive secretary visited universities in Europe and member institutions in the region.

Financial assistance was contributed by the Asia Foundation, which made a grant enabling a full-time administrative assistant to be engaged, and which offered to support lecture visits by three professors in the region: this appears to be proving difficult to organize. The Leverhulme Trust Fund assisted the Seminar on University Administration.

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[1] *Constitution of the Association of Southeast Asian Institutions of Higher Learning*, p. 2 (Bangkok, Chulalongkorn University).

It is difficult to conceive such an Association with a more distinguished foundation. Its new President is H.R.H. Prince Wan Waithayakorn, Deputy Prime Minister of Thailand, rector of Thammasat University, and one-time chairman of the General Assembly of the United Nations. It has the support and presence of a number of vice-chancellors and high-ranking scholars at its general meetings, its executive secretary is himself, as the office requires, a distinguished scholar and teacher. Its membership covers all the universities in Malaysia, Thailand, Hong Kong and Viet-Nam, with the present exception of Dalat, and it has been steadily supported by two major universities in the Philippines and in Indonesia. It is to be hoped that the original support of the University of Rangoon will be renewed. Its constitution contains an ingenious device to prevent any one country with a large university representation from swamping a vote, and makes full provision for the admission of technological institutions, research institutes, and those teacher-training colleges which award degrees, or their equivalent, to their students, though with the exception of the College of Education, Bangkok, the non-university third-level institutions have not taken advantage of becoming members.

Unfortunately there are a number of significant factors which have inhibited the full deployment of the potentialities of ASAIHL. One is the inertia and lack of co-operation of so many institutions of higher learning in the region—unwilling to join, unwilling to subscribe $100 per annum, unwilling to reply to queries and questionnaires (perhaps a more understandable weakness), unwilling to supply information about research.

Another is surely the lack of an institutional basis for the organization of a programme which by its breadth, its high quality and its continuity would impress itself upon universities and institutions throughout the region. It is difficult to make a significant impression on South-East Asia with a budget of less than $10,000 a year.

It also seems possible that the very devotion of the secretariat in Bangkok has in some measure contributed to defeat its own aims by taking upon itself the full task of administering a widespread organization when perhaps some dispersal of responsibilities might have developed a stronger sense of co-operation among the more distant members of the organization, whose effectiveness must, a reversal of the basic theme of this report, be judged upon the quantity as well as upon the quality of its effective membership.

PROPOSALS FOR A SOUTH-EAST ASIAN INSTITUTE OF HIGHER EDUCATION AND DEVELOPMENT

It has become increasingly apparent as this study has progressed that the needs, the aspirations, the resources that have been brought to light and the lacunae that have been revealed, the opportunities for mutual assistance so lavishly available and so seldom seized, the obstacles to concerted action which are by no means insurmountable, the vast range of experience, both of failure and success which remains largely uncommunicated—all indicate the value, and indeed almost the necessity, of continuing, expanding and deepening the work that has just begun.

Equally it has become clear that the machinery for implementing this task needs to be, not an association, but an institution. The tasks involved stretch far beyond what can be accomplished by the intermittent enthusiasm of a group of devoted but extremely busy people: they call for an organized and continuous programme of work and service established in a settled and appropriate environment.

The case for fostering regional collaboration is surely irrefutable, whether stated in its broadest context as one means, through the minds of men, of reducing political tensions, or as a professional approach to problems involving the interchange of data, information, ideas, experience, facilities and people, and thus requiring a concentration of resources.

Accordingly it becomes necessary to devise a regional machinery to promote effective collaboration which will yield steady and cumulative results. To this end, both as an instrument for pursuing and assisting in the solution of the numerous problems, possibilities and alternatives stirred up by this study, all leading to the promotion of economic and social development through the activities of institutions of higher education, and also as a service to contribute to their own development, that they may the more speedily and easily accomplish this aspect of their work through a process of cross-fertilization, it is recommended that there be established a South-East Asian Institute of Higher Education and Development.

The institute is seen as being an autonomous body with its own council of regional representatives, enjoying a 'special relationship' with one of the universities of the region, being established either on the university campus itself, or in close proximity to various ancillary facilities such as libraries, laboratories and computer service. The hospitality of a major university would seem to be fundamental to the needs of such an institute—other amenities and facilities such as the availability of an international airport, good inter-regional communications and the possibility of reasonable accommodation for staff, fellows and guests would seem to follow from the very nature of the location of the 'host' university.

In these days of intensive international and bilateral co-operation for assisting development projects it is not altogether unusual to find major institutes appearing, by some form of international parthenogenesis, fully equipped to carry out their full programmes. If, however, the institute here envisaged is to grow by stages, the services which it might render could be established in up to four phases: (1*a*) Statistical Service, and (*b*) Clearing House; (2) Research and Training; (3) Promotional Activities, and (4) Teaching and Exchange Service. The sequence may be rearranged, provided that the information services under (1) are the first to be established. Only then will it be feasible to undertake research projects, train research workers, organize extramural meetings and seminars, and study the problems of staff and staff training. Accordingly, the following summaries of desirable activities are listed in a possible order of establishment rather than on grounds of functional precedence.

(1*a*) *Statistical Service*

It is, and will be for many years, unprofitable to discuss the statistical aspects of higher education without referring to the Robbins Report and the elaborate series of statistical inquiries and analyses upon which it was based. In the present context, referring to higher education in the United Kingdom, the report says:[1] '. . . we wish to draw attention to the importance for the formulation and carrying out of appropriate educational policies of a continuing supply of relevant and comprehensive statistical information. This is essentially a field in which it is impossible to form appropriate conceptions if a sense of quantitative perspective is lacking: and the information on which such a perspective must be based is so extensive that it needs expert analysis.

'We should be failing in our duty if we were to close this chapter without emphasizing with all the force at our command that the erection and continuation of an adequate statistical service is an essential condition of the successful working of all the machinery we have recommended.'

The committee discovered considerable gaps in available information: the plight, then, of the researcher or planner needing statistical information on a comparative basis applicable to the whole of South-East Asia is one at which the imagination may well falter. This lament was sounded in the Introduction to the study—it is not inappropriate for it to be reiterated at its close. Quite clearly the intricate detail demanded by the Robbins Committee indicates a depth of inquiry to which regional studies need not plunge, but a standardization of regional statistical procedure, and the careful collection of basic data under common definitions and terms of reference, are essential if significant studies are to be made into the provision of higher education in the region.

It might well be argued that this requirement should extend to all levels of education. Ideally it should, though the limited nature of any educational information available on a comparable basis is clearly revealed by the regrettably few fundamental and broads heads under which Unesco is able to classify statistical data on education in *Basic Facts and Figures* and its *Statistical Yearbook*.[2] However, the comparability of educational systems at the first two levels does not assume the major importance of that in higher education, since it is only here that the equivalence of qualifications has to be examined, that questions of topics for regional rather than national research may need investigation, that the exchange of staff and students is both probable and desirable, and that every institution is in a position where it can learn from the experience of others. Moreover, with the very considerable number of private third-level institutions in the region, it could well be more likely that such institutions would co-operate more freely in designing and completing statistical returns for their own institute, rather than for a government department, though the results thus achieved, with their comparative setting, would be of great value to all governments concerned.

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[1] *Higher Education*, op. cit., *Report*, paras. 805-6.

[2] First published in 1964 for the year 1963.

Statistical information is the foundation upon which planners and policy makers must contract their plans. A comprehensive policy in higher education can only be formulated on the basis of full-scale manpower studies and accurate information on the future outputs of the educational system. Next come the needs of the institutions themselves; at a time when they are developing fast and seeking to establish their own, and not an inherited identity, they need more than ever to study the experiences, both quantitative and qualitative, as far as possible supported by comparable quantitative indicators, of their colleagues similarly occupied throughout the region. Finally there are the needs of research workers, educationists, economists, sociologists, psychologists and medical researchers, for whom the absence of vital statistical information[1] means that the value of their work may be imperilled by the enforced use of dubious estimates and guesses not always inspired.

Most educational information at present made available, and this is equally true of data in South-East Asia, is of the cross-sectional type, based upon particular years, and there is a great need, as in statistical material on the lower levels, for historical or horizontal studies showing the performances of cohorts of students from enrolment to graduation and beyond. Consequently the use of individual record cards in duplicate is recommended as an efficient basis for staff and student information.

It is suggested therefore that the basic task of the Statistical Service, working in collaboration with its members, would be to devise the nature and form of the statistical information to be collected, analysed and published, and the machinery to be established for this purpose. In addition the service would of course also be available to handle statistical data on a regional basis required by other activities of the institute.

It is possible that assistance in establishing the technical operations and bases of the service might be obtained from the Statistical Division of Unesco, which is only too familiar with the pitfalls of undertaking statistical comparisons.

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1. Part II of Appendix IV of the Robbins Report (p. 65-9) outlines in considerable but by no means exhaustive detail the general aims of collecting and analysing statistical material in the field of higher education, and gives a general indication of the areas to be covered.

(1*b*) *Clearing House*

The Clearing House functions of the institute would include the organization and co-ordination of all documentation, the publication of lists of current research projects, the abstracting of major unpublished theses, the collection and circulation of information on activities in higher education, and the maintenance of liaison with universities and university groups outside the region. It is possible that a microfilm service might be set up, with the co-operation of member libraries, for the microfilming of significant unpublished or out-of-print material including theses and other research papers.[1] The Clearing House would also function as an information centre dealing with queries both from members and also from individuals and bodies outside the region: it would thus need to collect and keep up to date all available calendars, publications and other published material from universities, colleges and research institutions throughout the region: this material would undoubtedly develop into a collection of administrative and scientific documentation extending to comparative references outside the region. Finally, if one function should take priority over the others, it must surely be the circulation of information on research contemplated, in action, or completed, within the region.

(2) *Research and Training*

Studies of regional significance not requiring large-scale organization would be carried out by this department, which would also plan and formulate the methodology of extensive studies and joint research programmes calling for wide participation throughout the region. These studies would be mainly of two kinds. What may be termed external projects would explore the areas in which higher education can make specific contributions to economic and social development, studies in manpower needs, linguistic problems, the sociology of rural development, agricultural research on a region-wide basis, or technological problems related to industrial development. Internal studies would be concerned with the functioning of the universities and technical institutes themselves—with curricula and the possibility of integrating the fields of technology and culture, with the cultivation of an international outlook compatible with intense national feeling; or more intimately with patterns of university administration and finance, with the training of university teachers, with problems of student welfare and discipline.

A further function of this department, which might well occupy the attention of the director himself, would be to explore the possibilities—academic, financial and political—of pooling resources for certain specialized and advanced studies at various national institutions, to secure optimum results by the concentration of regional effort while reducing the cost to individual national budgets. Such concentrated forms of organizing specialized studies and research would also have the happy result of making the most of limited human resources, of attracting distinguished scholars from overseas, and of promoting collaboration in other fields, to the great advantage of the region. There may well be areas in, for example, the fields of marine biology, parasitology and in oil, rice and rubber technology where such a move is at least worth study.

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[1] There is a useful precedent in the commissioning of microfilms of research studies from Malaya and Hong Kong by the Yale University South-East Asia Programme.

The operation of this department should be designed to provide a training in research techniques as applied to higher education and development for research fellows assigned to the institute by member countries and institutions and these would, in fact, constitute the main elements of the operational strength of the department.

(3) *Promotional Activities*

This department would undertake the organization of the external activities of the institute, whether by meeting, seminar or workshop, by the initiation of research projects or by services to groups and associations devoted to subject studies.

There are many fields of administrative activity common to all higher institutions which need both further investigation and also a pooling of the experiences already undergone and the conclusions formulated, which in most cases have no wide currency. Such topics as admission requirements and procedures, examination policy and methods, student guidance, the relationship between secondary-school curricula at the final stage and first-year university work, and many questions arising from an examination of the efficiency of university procedures, are all matters of common interest which need more than a few papers and an amicable discussion if higher education is going to fully justify its heavy expenditure and effectively accomplish the new as well as the traditional tasks that face it.

The particular circumstances of the case will probably decide whether the public relations aspect of the institute's work should be undertaken by the Clearing House or Promotions—or jointly. Whatever the machinery devised, the projection of the image of the university, the college of technology and the teachers' training college within every country of the region is indispensable. Whether the motives are to develop pride in national institutions, an understanding of them, or to ensure that in the bargaining for funds which, despite the efforts of the planners, is an inevitable aspect of the political stage of public finance, higher education does not suffer through unawareness of the significance of its contribution to national progress.

It may well be that the organization of seminars in the subject fields with, it is hoped, a wide attendance will be considered the best means of approaching the formation of specialist groups—of economists, linguists, historians, sociologists, mathematicians, scientists in various fields—the needs and possibilities are numerous. This might ensure the founding of a family which, after procreation and an initial period of nurture, might send its members out into the world on their own though not without the type of support which parents inevitably continue to extend to their offspring, whose independence seldom renders them less exigent in times of need.

(4) *Teaching and Exchange Service*

This service embraces a not very happily named series of activities concerned both with the exchange of teachers and students within and without the region—and possibly, if this were desired by members, with the filling of staff vacancies from within the region. Furthermore the service would undertake the work of initiating inquiries into methods of university teaching, building up a collection of information both on new methods and on evaluations made of these methods.[1]

Thus the Teaching Service would, through Promotions, organize summer schools and workshops for young university teachers—and at the request of principals might also provide a staff member able to evaluate the teaching capacity of new and young staff members, and assist them when necessary—this is likely to prove the least overt, but not the least effective, of attempts to deal with individual teaching difficulties.

Staff

The institute calls, in terms of full-time personnel, for a director of high stature in the region, and five departmental heads, one of whom would presumably act as deputy director. The office of the director would carry both the administrative load of the institute, and ensure that the varied interests of universities, teacher-training colleges, technological institutes and research institutes admitted to membership were all adequately represented in the activities of the institute. Professional and clerical staff would also be required for each department: basic needs would have to be initially formulated by department heads and adjusted to fit the budget available and the programme approved within that compass.

The staff of the institute would not be large, but to be effective the key posts would have to be filled by first-class men combining professional and administrative qualities: they would doubtless be missed, and badly missed, by their institutions, but the loss should be spread over the region, and would not in any case be so complete as if the staff members in question had left the region entirely, as a number do. Certainly any member of the staff should, after a period of service with the institute, have gained immeasurably in experience, prestige and status.

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[1] See above, Chapter 11, p. 401.

The United Nations practice of a General Assembly drawn from contributing States to approve the programme, and a council of elected members to supervise its operation and to advise on continuity and future programmes, offers a most useful precedent for the regulation of the affairs of such an institute.

Finance

There is of course one main if not insuperable obstacle to this concept—finance. There appears at the moment little likelihood of the universities and colleges in the region contributing materially to the considerable costs of such a project—though apart from a reluctance in developing countries to spend money on regional projects it is not always easy to see why—and it would seem that the only course would be for the concept to be discussed as widely as possible within the region, support (moral as well as financial) assessed, and a body appointed to devise a costed scheme which, covering both capital and recurrent expenditure, after regional approval might be submitted to one of the great foundations with a request for large-scale assistance. Assistance for a project with such wide regional implications might also well be sought from the United Nations and the Specialized Agencies, and from countries offering bilateral support. It must, however, be foreseen that contributing sources may well agree to provide funds for capital expenditure, and for maintenance, but only for a set period, after which the region would be expected to maintain the institute once it had revealed its viability and its value. It is not an unreasonable point of view. Nevertheless, neither the failure of the universities to support the small Economic Centre after initial foundation assistance nor the unpaid subscriptions to ASAIHL does much to encourage optimism. Should this condition prove a major obstacle in view of the difficulty of securing a number of national financial commitments, an alternative course of action would be for the university prepared to enter into association with the institute to launch the project on a small scale, developing its work as a regional organization on the basis of a subscription and fees for special services. Such a proposal has the inevitable disadvantage of locating responsibility at one focal point: the host institution, and the host country as a result of their interest, may well be left, through no will of their own, with a large measure of the benefits, and possibly, in the case of the institute, almost all the cost.

Again this is not a peculiarity of South-East Asia. Attempts to organize regional institutions in Africa, or to distribute university faculties among a group of countries, have met with little success, though the University of East Africa, with constituent colleges in Uganda, Tanzania and Kenya, offers a more hopeful prospect. It is difficult to believe, however, that a group of established universities and colleges could not manifest the maturity of outlook required for regional collaboration, and, though admittedly it might not be the easiest of tasks, convince the governments of their countries that they should be permitted to do so on a non-political basis through budgetary provision for external relations.

It may well be felt that the tendency to regard higher education largely as a matter for universities, to which reference was made in the Introduction, has been reflected in these proposals. Such is certainly not the intention, and whilst academic standards must clearly be safeguarded the institute would be grievously ineffectual in serving the whole concept of education at the third level if it were not to pay full attention to the problems and needs of institutes of technology which have reached a graduate level, or of teacher-training colleges with any responsibility for training staff destined to teach the pre-university years of the higher secondary course.[1] As regional co-operation in higher education should also both promote and reflect the strengthening of the link between second- and third-level institutions these are additional reasons why technological institutes and teacher-training colleges have much to offer, as well as much to gain, from such an association.

Unhappily it is once again necessary to refer to the ideological and political differences which at the moment frustrate every effort to promote economic and social development on a regional basis. However, it is significant to note that the meetings of ASAIHL remain more widely attended by representatives of institutions in countries with opposing viewpoints than most other regional activities: if this is no more than an omen, it is at least a favourable one.

Were an attempt made to set up the machinery for planning and then establishing such an institute within the region, perhaps by one of the major universities, possibly, in the first instance, by one of the international agencies or one of the great foundations active in the region, the toil, the times of frustration, and the unceasing hope which have accompanied a long exercise would have more than justified the wisdom of those who guided this study and the labour of those who have carried it out.

[1] It will not be easy to define such institutions but in practice the requirement of teaching specified courses to graduate level or its equivalent should make an acceptable qualification for admission.

13. Major issues and conclusions

The proposed establishment of a South-East Asian Institute of Higher Education and Development is the only firm and specifically regional recommendation made in this report. Chapter 5 of the report details, and in large measure endorses, the recommendations made by Guy Hunter for individual countries on minimum projections for high-level manpower output in the fields of agriculture, technology, education and medicine. For the rest, the report has endeavoured to avoid specific recommendations, since these, if applied on a regional basis, would require so many emendations and reservations to fit individual national circumstances as to be of little general value. Instead, it indicates lines of thought and suggests implications, conceived, it is hoped, in practical terms, which may both stimulate educational planners in the development of higher education and fortify them both in their encounter with national planning authorities, when a case has to be made for due emphasis to be laid on education as an essential element in economic development, and also in briefing their political masters, when it is likely that the social significance of higher education will need to be stressed.

It is nevertheless possible that certain dominant themes will have been detected running through the report. In the first place, emphasis has throughout been placed upon the quality of education; it has been everywhere maintained that the personal qualities and training of the teacher are the first requisites for qualitative advance, and the belief reiterated that further quantitative advances should be preceded by the output of well-trained staff.

This leads to the second theme, the necessity for developing an intimate and fruitful relationship between higher and secondary education; a relationship which is as much concerned with advanced secondary pupils who do not propose to enter institutions of higher education as with those who do. It is furthermore suggested, as one of the means to this end, that the universities should assume over-all responsibility for the professional aspects of teacher training for all levels of education, which are considered as integral elements of a single process.

In the third place, the report has everywhere stressed the importance of a broad general education in the secondary schools and a liberal element in all branches of higher education. The most significant application of this principle is to be found in the educational background of students on entry to universities and colleges: university entrance requirements should not dominate the field of academic secondary studies, and the first year of higher studies should be framed with a full knowledge of the approach and content of the higher secondary courses. The importance of building all forms of specialized training upon the firm foundation of a sound general education at the secondary level has also been emphasized, and it has been advocated that such training should not be undertaken until after ten years of general education have been completed. Great importance is then attached to a wide development of training at technician level based upon a fusion of institutional teaching and practical training within industry, commerce and the professions. Despite the unequivocal phrasing of this opinion, the report has, it is hoped, ventured with due circumspection into fields which need highly expert study, the immediate need for which has been frequently stressed.

Within the universities the importance of post-graduate studies and the need for the development of research, as often as possible of an interdisciplinary nature, based upon local opportunities and needs, has been referred to on many occasions, as a contribution to national development, as a means of training future university staff, as essential to developing the full competence of the university, and, within inescapable limits, as making the best possible contribution to the universal advancement of knowledge and mutual understanding.

Finally, and it is perhaps the dominant note of the report, emphasis has continually been placed upon the need for the university to extend its thinking, its teaching and its influence beyond its own campus, whether in associating its competence in almost every field with the planning activities of the government, in developing its relations with the general public, or in bringing its resources to bear upon the problems of the agricultural sector. In this last vital context, a concept of satellite centres affiliated to metropolitan institutions of higher education has been developed which may offer a variety of solutions to meet particular situations.

The following resumé very briefly summarizes those major issues and proposals of the report which appear particularly to invite consideration and further study.[1]

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1. In the following pages an attempt is made to concentrate views which may often have been reiterated in a variety of different contexts throughout the report. Major references are given at the close of paragraphs: in most cases, however, the argument there developed will be supported, extended or referred to in many places in the report.

THE GENERAL BACKGROUND

The interrelation of economic and social needs and aspirations

There are three related forces in the process of development. Social change is largely a prerequisite, and inevitably a result, of economic development: both must take account of cultural values if progress is to mean more than change.

To promote and integrate economic, social, and cultural development policies is therefore essential to a purposeful and happy life for both society and the individual. Education, and in particular higher education, must bear a special responsibility for the achievement of such an end, and should work in close collaboration with the planning machinery of government (p. 196-201 and p. 222-30).

In addition to the general significance of the social as well as the economic aspects of development, a particular need is a concerted approach, through various forms of co-ordinated extension work and community development, to the control of population growth. This is essential if individual standards of living are to rise significantly and more rapidly over the ensuing decades (p. 123).

The balance of quality and quantity

Effective stress on quality not only improves the qualifications of the individual product of all levels of education; by reducing wastage it also increases the quantitative output/input ratio—more and better-educated products emerge at each level of education at a comparatively lower unit cost.

Qualitative development must at least accompany if not precede quantitative expansion if the vicious circle of poor education, bad teachers, insufficiently prepared students and high wastage is to be broken. Enrolment figures are not the sole criterion, even quantitatively, of the effectiveness of an education system (Chapter 8, especially p. 246-8).

MANPOWER

Attention is drawn to the following points: (a) the high wastage rates in university training and the often low quality of the output: if this could be remedied, the current numbers entering higher education could in most cases satisfy minimum high-level manpower needs (p. 67-74); (b) the urgent need for a much wider flow of university-trained teachers for secondary education (p. 248-50 and 251-7); (c) the specific need for a higher output of (i) trained agricultural staff, (ii) doctors, and (iii) the scientists needed to support these professions by teaching and research (p. 133-88 *passim*); (d) the general need for the production of high-level manpower in agriculture, health, education, technology and administration, and its deployment in the rural areas, consequent upon the need for the development of agricultural productivity (Chapter 5 and p. 98-101, 120-4).

Whilst the universities within the region are geared to the production, whatever may be the quality, of high-level manpower in most fields, a major training lacuna is in the area of supporting technical staff at the sub-professional level—nurses, radiographers, accountants, agricultural field staff, surveyors and technicians in the various engineering branches. This involves the organization of post-secondary technical courses based largely upon practical on-the-job training (Chapter 5, p. 192-3, 300-5, 315-18).

Regional and national investigations of the form, content and output of technical and technological education are a prerequisite of further development planning (p. 20-1, 78-83, 300-5).

Three successive stages of educational policy are proposed (p. 128-31): (a) The consolidation of the provision for higher education, setting output targets for a minimum production of high-quality graduates; the improvement of secondary education to reduce high wastage rates; and a massive increase in post-secondary vocational training—these steps should take precedence over the quantitative expansion of primary education; (b) when this has been achieved, and while the economy is adequately absorbing the educational output, primary education should be consolidated and extended to react effectively to the new leadership generated by the first stage; (c) as the economy gathers pace towards 'take-off' and the need for technicians and technologists begins to rise steeply, priorities should again be allotted to the upper levels of the educational system.

SOCIAL AND CULTURAL PROJECTION OF HIGHER EDUCATION

A number of qualitative implications of the development of higher education are of particular significance both as factors in increasing productivity and as contributors to the enlargement of the public image of the university as an essential element in social and cultural progress.

Interdisciplinary research

The importance of interdisciplinary research is emphasized for pragmatic as well as academic reasons—success in co-ordinating action to meet problems arising from rapid technological and economic changes depends on it. Through it universities can help to bridge the gulf between modern processes and traditional attitudes, between new and old values (p. 258-67, 281-2, 383-7).

Educational needs of community development

Universities, with their potential for the organization of interdisciplinary research, should undertake basic studies in sociology, agriculture, language and custom which are an essential prelude to community development viewed as a social operation requiring a complicated methodology.

Other techniques to be employed by universities in developing a relationship with rural people and their problems include the use of media of mass communication; the training of community development leaders; the reorientation of certain curricula in order that considerations of community development can become an integral part of appropriate university courses; and extension work, particularly in the agricultural field, with the help of properly organized student work camps (p. 216-22, 274-82).

Extramural courses

A major activity of universities in the field of adult education should be the provision of the opportunity for capable adults to improve their competence at the post-secondary level, particularly for students who have dropped out after their first attempt to take a degree course, or for students at a remove from the university seeking a further qualification. Specialized courses in the development of particular skills may afford a most useful development of potential manpower and would supplement the work of the university's other extramural courses in offering opportunities for developing the cultural horizons of those in a position to benefit by such stimulation.

Among methods adopted in developing extramural work there should be considered the provision of branch centres, particularly for subjects requiring laboratory work, the development of library facilities, the opportunity for personal consultation with tutors, the use of correspondence courses, radio and television courses, organized on a basis of listening and viewing groups, again with personal contacts between group and tutor. If these proper demands are made of universities, it is necessary that they should be given the finance to staff and equip themselves for such tasks (p. 267-74).

Cultural development

As a corollary both to the general concern for developing national identity and the increasing preoccupation of universities with a teacher-training role, either in relation to the training of school-teachers, of university teachers, or extension workers of various types, cultural and aesthetic values should receive full attention in every aspect of university education. The opportunities of the universities to promote creative pursuits in the arts should be seized (p. 282-9).

Language

In this field the universities must be both prepared and required to play a much fuller part than has often, hitherto, been the case. This refers as much to the development of the national language as an adequate medium of communication, as to the necessity for research both into the techniques of language teaching and the evaluation of the progress of language policies. In so far as they are established at all, *ad hoc* academies for the development of language policies should be designed to function in the most intimate relationship with universities.

On the other hand, universities will always need to make adequate use of a language of wider communication, particularly in scientific fields, to keep in touch with the very rapidly growing body of knowledge. They would thus for a number of years to come find it necessary to undertake definite measures to promote the use of the appropriate language of wider communication among students who have not acquired an adequate competence in it at school (Chapter 7, p. 228-46).

INSTITUTIONAL PATTERNS

Private institutions

Where it is considered desirable to supplement the government provision of facilities at the third level with private institutions, it is necessary to safeguard standards without narrowing the scope of such institutions by rigid prescription. If such institutions are clearly meeting a felt need they should not be allowed to fail for want of support in areas in which the government can properly assist, such as concessions in relation to import duties on educational material and equipment (p. 291-6).

The size of institutions

While it is extremely difficult to indicate how many third-level institutions should be established in terms of population or regional needs, there seems to be a natural law that universities tend to be big. Unit costs in a multi-faculty institution appear, up to a certain limit, to decrease proportionately with the size of enrolment (p. 291-300).

Satellite institutions

Where no special circumstances such as the presence of an existing specialized institution or the particular needs of a region are at issue, a policy may be advocated by which multi-faculty universities with a wide range of post-graduate and research activities, or technological universities, expand their influence through satellite institutions at a distance from the central body. These may combine a number of related purposes, such as offering teacher-training facilities, serving as a centre for research and evaluation into, for example, literacy problems or rural sociology, organizing technical courses related to the environment or specific location of the institute, and in general acting as a nucleus for the promotion of extramural activities. Such centres, possibly offering in the first instance a series of diploma courses of two years' duration, may even develop into small liberal arts colleges. Eventually the satellite itself may hive off, first as an affiliated university college and perhaps ultimately as a university in its own right. The essential principle is that of initial affiliation and of a two-way channel between the major university on the one hand and outlying research and development activities on the other (p. 316-17).

A model system (p. 313-19)

Postulating the possibility of such dispersed multi-purpose units, the following model of an educational system, with the necessary local adjustments, may be of service to planners:

1. A primary education (ultimately universal, free and compulsory) for at least six years. For financial reasons, free education may, for some time to come, have to terminate at this point.
2. Post-primary vocational schools, while primary education is terminal, supervised by a centrally situated higher secondary school in the locality. These would offer a training for employment, and should not be considered an integral part of a continuing education, which would have to be resumed by means of part-time courses after a period in industry, agriculture, trade or other forms of employment.
3. General secondary education for a further four years, the last two of which should embrace a number of optional courses, including the manipulative skills and an introduction to the sciences.
4. Three options then follow: (a) employment; (b) technical and professional training at Category II level; (c) a two- or three-year course for entry either to the university or to technological training at degree level.

Such a system, whilst relying heavily upon existing facilities such as the upper forms of higher secondary schools for pre-university training, appropriate divisions of technical institutes for technical training and the preparation for technology, and specialized Category II training institutions, such as agricultural colleges, primary teacher-training colleges and nursing schools, would also call heavily upon the proposed affiliated institutions in the rural areas for much Category II training, for diploma courses for university preparatory classes, and for teacher training.

The possibility of horizontal and vertical mobility throughout all its stages is an essential element of the pattern.

5. The multi-faculty universities, technological universities and major technical institutes could of course carry out the greater part of undergraduate and graduate training, and should bear responsibility both for the standards and development of affiliated rural colleges or centres, and also for the supervision of post-secondary training, whether in specialized institutes, apprenticeship schemes, or training within industry.

STUDENTS AND STUDIES

Admissions

Increased selectivity in university admission procedure is necessary to control admissions in accordance with available places, to eliminate unsuitable candidates and to ensure that the best of the candidates are admitted (p. 319-26).

A clearing house system is recommended to regularize admission to the various third-level institutions. In addition to performance in subject matter examinations and tests of academic aptitude, the importance of the secondary school records of candidates and the assessment of secondary-school staff is strongly stressed. Such a system necessitates the organization of an effective system of vocational guidance in secondary schools (p. 326).

A systematic policy of broad financial assistance for needy students is essential in order to assure that manpower requirements are appropriately met, to make the widest possible use of the talent dispersed throughout the country and to prevent discrimination in facility of access to higher education (p. 345-52).

In educational planning at any level the growing significance of the education of women must be appreciated and encouraged until they are assured of equal opportunities with men (p. 211-16).

Fields of study

In view of the great demands of development upon the pure and applied sciences and upon technology and agriculture, the imbalance between the present heavy enrolment in arts faculties and the comparatively low number of enrolments in faculties of pure and applied sciences and engineering needs correcting. The number of students in the scientific and technological faculties should reach at least 50 per cent of the total enrolment in any one year (p. 67-79, 132-42 *passim*).

The organization of studies

It may be necessary in some cases to consider either lengthening academic courses by one to two years, or extending the academic year, in order to make adequate provision for completing ground work which secondary education has been unable to cover (p. 335-6).

In view of the present low standard of the preparation of students for admission to universities a study might profitably be made of those third-level institutions in the region where unit or credit systems of course organization are in operation (p. 342-5).

Post-graduate studies

Special emphasis should be laid on the development of post-graduate study as a method of developing the contribution of the universities to research on developmental problems, as a means of attracting and training their own future staff, and as an incentive to the recruitment and retention of other staff of high calibre (p. 338-40, 364-5).

Study overseas

Where appropriate national courses are available, students should not be offered awards for study overseas until they have obtained at least a first degree (p. 83-6).

Residential facilities

In view of the desirability of providing a wide range of student amenities—social, cultural, intellectual and athletic—it is desirable that the provision of residential accommodation should be of as modest a nature as is consonant with simple hygiene, sound died and a quiet atmosphere (p. 352-5).

Counselling and welfare

The value of guidance is stressed not only as necessary to the progress and well-being of the individual student, but also as a means of working to a more natural balance in higher education enrolments and graduate employment objectives in terms of national manpower needs (p. 356-7, 390-1).

Of equal significance is the provision of effective health services, particularly in an advisory and preventive capacity (p. 355-6).

Student responsibility

Every opportunity should be afforded to students to adopt co-operative methods of promoting their own welfare as well as to engage in community development and social welfare work, and appropriate machinery should be devised to ensure that they are, at all times, adequately involved in the planning of measures which concern them (p. 357-9).

TEACHERS AND TEACHING

Teacher training

The key to quality at any level of the educational process is to be found in the standards of the teaching: It is essential that educational leadership (which is not necessarily allied with administrative responsibility) for the training of teachers at all levels should lie within the universities of each country, embracing both their usual responsibility for the training of graduate teachers and a wider relationship to be exercised through guidance to and co-operation with institutions for the training of teachers for primary and lower secondary schools. Such a policy would mean considerable strengthening of university staffs: this is considered an essential element in development and a most promising investment (p. 248-58).

Recruitment of university staff

Attention is drawn to the extremely deleterious effect on recruitment of the low salaries paid to academic staff throughout most of the region: these offer little attraction to graduates for whose services government, industry, and commerce are competing.

A number of incentives other than that of size of salary are available to attract suitable staff, particularly the provision of adequate research facilities, a generously stocked library, good equipment, clear avenues of promotion and opportunities for further study abroad.

It is suggested that where overseas recruitment is necessary one of the most effective forms of it is the employment of small university recruiting missions (p. 366-74).

Particular stress is laid on attracting good local graduates to university teaching through combining research fellowships with assistant teaching responsibilities and on improving the ability of young teachers through advice from visiting senior teachers and an occasional experience of teaching in the well-established department of a major university (p. 364-7, 374-5).

Teaching and research

The functions of teaching and research within universities in the stage of development attained by those of the region are seen as indivisible. It is suggested that the first aim of research should be to further the knowledge and experience of problems in the region, rather than to pursue studies aimed at attracting international attention (p. 381-7).

The method of teaching by lecture is only one part of a process which should embrace small tutorial groups, seminar discussion groups, laboratory work, field work and private reading (p. 387-91).

Teaching aids

Experiments should be initiated without delay to investigate and evaluate new methods of teaching, including programmed instruction and closed-circuit television. The universities also need to take counsel among themselves on effective methods of training new university staff. It is, however, emphasized that this is a period for research and experiment, not the moment for the premature introduction of techniques which have yet to be evaluated either elsewhere or within the region (p. 397-8).

INTER-REGIONAL CO-OPERATION

Among recommended forms of inter-regional co-operation are the exchange of staff and students, the exchange of information on educational experience and research projects, wider and more continuous contact between those working in the major subject fields, and the concentration of advanced research and training at appropriate institutions in the region (p. 408-19 *passim*).

A PROPOSED SOUTH-EAST ASIAN INSTITUTE OF HIGHER EDUCATION AND DEVELOPMENT (p. 420-7)

As a regional machinery to promote collaboration which will yield steady and cumulative results, and also as an effective instrument for pursuing and assisting in the solution of numerous problems raised in general terms by the study, it is recommended that steps be taken to set up a South-East Asian Institute of Higher Education and Development. The institute is seen as being in special relationship with one of the universities of the region, but directed by its own Regional Council, and operated by a staff drawn from all countries within the region. Funds to establish and support such a project would have to be sought from a variety of sources—governmental and intergovernmental contributions, bilateral and international sources, and the private foundations.

The functions of such an institute would be twofold, and mutually supporting: (a) to promote, either through its own activities, or by sponsored national or international projects, the study of the contribution which can be made by higher education to economic and social development; (b) to foster the co-operation of all types of third-level institutions within the region—university, technological or technical institute, training college and specialized college and institute—in order that the potential of their contribution to development may be fully realized.

The services which might be performed by such an institute are indicated by the following summary of the functions of the departments and services of which it might be composed: (a) a department of post-graduate research into problems affecting higher education and social and economic development; (b) a Statistical Service dealing with the statistics of higher education, including technology, and the statistical needs of regional research; (c) a Clearing House and Documentation Service of information on university and technological requirements, courses, fields of research and research theses; (d) a Promotional Department for planning and ensuring the execution of regional research projects, meetings, seminars and workshops; and for developing inter-university co-operation throughout the region; (e) a Teaching and Exchange Service concerned not only with the exchange of staff and students but also with experiments into new techniques of teaching and forms of assistance to young teachers.

Despite a few uncertain divagations into the bypaths of economics, sociology and technology this study has been undertaken essentially as an exploration into the field of comparative education.

It is all but one hundred and fifty years ago since one of the first comparativists, Marc-Antoine Jullien, described this field: 'Education, as all other sciences and all the arts, is composed of facts and observations. It, therefore, seems necessary to form, for this science as one has done for the other branches of our knowledge, collections of facts and observations, arranged in analytical charts, which permit them to be related and compared, to deduct from them certain principles, determined rules, so that education might become almost nearly a positive science, rather than be abandoned to the narrow and limited views, to the caprices and to the arbitration of those who control it, and rather than be diverted from the direct line which it ought to follow, be it by prejudices of a routine nature or by the principle of system and innovation.'[1]

In this study the facts have proved elusive, many of the observations have been made from a considerable distance, and the analytical tables are far from complete—nevertheless an attempt has been made not so much to temper the sometimes heady excitements of education with the discipline of scientific method as to exploit a third aspect of comparative education assumed rather than explicitly stated by Jullien. That is, the presentation of educational experiences within their social, economic and political setting in a manner which permits the planner and the administrator to attempt a prognosis of the eventual issue of their plans.

Education today is in the hands of the administrator. The high noon of the pedagogue has passed, and the real-estate developer has descended upon the groves of Academe. Thus the president of a great university, after a passing glance at the gentlemanly ideals of Newman and the sociological arrangements of Flexner, has come to the heart of the matter: 'The University

[1] *Jullien's Plan for Comparative Education, 1816-17*, by Stewart Fraser, p. 40. (Bureau of Publications, Teachers College, Columbia University, 1964.)

of California last year had operating expenditures from all sources of nearly half a billion dollars, with almost another 100 million for construction; a total employment of over 40,000 people, more than IBM and in a far greater variety of endeavours; operations in over a hundred locations, counting campuses, experiment stations, agricultural and urban extension centres, and projects abroad involving more than fifty countries; nearly 10,000 courses in its catalogues; some form of contact with nearly every industry, nearly every level of government, nearly every person in its region. Vast amounts of expensive equipment were serviced and maintained. Over 4,000 babies were born in its hospitals. It is the world's largest purveyor of white mice....'[1] It is surely significant that here is no polished Oxford quip at the expense of Cambridge, no triumph as of Yale over Harvard, but a victory of size claimed over an electronics corporation.[2]

While complexities such as these are not likely to disturb institutions in the region for some time to come it has already been admitted that this study too has been pursued largely in terms of planning and organization. But this has been done in the steadfast faith that when the clouds of administrative action have lifted there will emerge, at the centre of every campus, clearer and more inspiring than ever before, the image of Mark Hopkins still firmly seated on his bench, whether his students remain grouped around him, or whether they now gaze at his features and listen to his words on the screens and from the loudspeakers of a listening nation.

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1. Clark Kerr, *The Uses of the University*, p. 7 (Cambridge, Mass., Harvard University Press, 2nd printing, 1964).
2. It may not be necessary, but it would be ungenerous not to add that even with 100,000 full-time and 200,000 extension students the academic standards of this great multiversity are without reproach.

Appendixes

I. Glossary

The collection of notes on educational terms given below is simply an attempt to clarify the meaning and significance of these terms in the report: it does not indicate alternative or additional usages of the listed terms unless these are to be found in the text,[1] and is intended to be explanatory rather than precise. Special attention has been given to terms which are not common to all systems.

Academic
The term is used very widely to indicate matters and persons related to the world of scholarship rather than that of industry or of administration. It is never used in any pejorative sense.

Academic year
(a) The period during which instruction is given (also referred to as session), which is normally dated from the end to the beginning of the long vacation and divided into two (SEMESTERS)[2] or three (TERMS, TRIMESTERS OR QUARTERS) parts, with recesses in between. In considering the effective length of the academic year, account needs to be taken of actual working weeks, excluding other holidays as well as the long vacations.

(b) On occasion, but not in this report, the term academic year is also used to refer to the administrative or fiscal year of an institution (e.g., October to October instead of October to July).

Academy
(a) (i) A specialized institution of higher education (e.g., music, fine arts) or

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[1] Further reference may be made to the 'Glossary of Terms Used' included in pages 309-21 of the Unesco Report on *The Development of Higher Education in Africa* and usage has been checked with the *Dictionary of Education*, ed. Good (New York, McGraw Hill, 1959), and with the *Encyclopedia of Educational Research*, ed. C. W. Harris (New York, Macmillan, 1960).

[2] Terms thus printed in SMALL CAPITALS are themselves the subject of a note in this glossary—but this indication has not always been deemed necessary.

training (e.g., foreign service, military) or (ii) a learned association which usually has some research or cultural functions, either directly or through sponsorship.

(b) In Indonesia the term is usually reserved for specialized educational and training centres attached to specific government departments. These provide further training and education, which include undergraduate (SARDJANA MUDA) and graduate (SARDJANA) courses, for both staff and prospective staff candidates.

Adult education
See: Education.

Age: school ages, age groups
A population may be divided into groupings of various age spans—e.g., 6-11, 12-17—which generally correspond to normal or desired ages of entry to, and completion of, a given LEVEL of education. In the example above, 6-11 is the age-range in which a primary education of six years is supposed to be completed, and 12-17 the range for a secondary education of six years. It will be noted that the years for both the initial and the final age are counted: in the primary education example, entry is supposed to take place at the beginning of the sixth year of life and completion at the end of the eleventh. For particular countries, school years referred to are those current in the country concerned: demographic educational generalizations and comparisons are thus subject to various qualifications. A considerable number of pupils will always be over the 'normal' age for their class. This also needs to be borne in mind when considering ratios of school enrolments to population age groups.

Agent technique
A title awarded in Viet-Nam on satisfactory completion of three years of technical education and training in specialized fields (e.g., electricity, construction, agriculture) following the first *cycle* of secondary education (i.e., four years' secondary after five years' primary education). In terms of total years of required study, the AGENT *technique* title is equivalent to the BACCALAURÉAT *technique*, but the latter represents the conclusion of a course which is the normal preparatory path to higher technological education or to teacher training in technical subjects.

Agrégation
A degree awarded in French universities on the basis of a competitive examination, qualifying the holder for a teaching post: (a) in secondary education in arts and science, when it is taken after the LICENCE; (b) in higher education in law and medicine, when it is taken after the DOCTORAT.

'A' level
Advanced level—the standard of the General Certificate of Education awarded by English examining bodies at the end of the final two years of secondary education. Two or three passes at 'A' level are the usual prerequisites for admission to a university. 'A' level papers are taken two years after 'O' or Ordinary level papers. The nearest equivalent in French systems is the BACCALAURÉAT Part II.

Assistant
See: Lecturer; Instructor; Medical assistant.

Associate, associateship
A diploma awarded by Philippine institutions of higher education on the successful completion of two years of college (see also: Liberal arts college; Junior college).

Baccalauréat
Certificate of secondary studies, awarded on the basis of examination after the completion of the second CYCLE of secondary education. It consists of two parts: (a) Part I, based upon six years of secondary studies with specialization starting in the fifth year; and (b) Part II, after an additional year of more advanced specialized studies.

Bachelor's degree
The first degree, in arts (B.A.), science (S.Sc.) or education (B.Ed.), awarded to university students successfully completing a full university course. (See also: Bakaloreat.) The B.Ed. degree should not be confused with the Diploma in Education, frequently awarded to students with a first degree (B.A. or B.Sc.) who complete a further year specializing in education. The first degree in most Scottish universities is the master's degree (M.A.). It is admitted that the situation is confusing.

The first degree in universities organized on the French pattern is the LICENCE.

Bakaloreat (Kandidat)
An Indonesian term not to be confused with the French BACCALAURÉAT. In certain faculties it is equivalent to the SARDJANA MUDA and in English the qualification may be referred to as a bachelor's degree—a translation occasionally also given for the SARDJANA MUDA itself.

Board of trustees (or regents or directors)
The governing body of an institution of higher education responsible for determining general policy. The members are usually laymen, in the case of State institutions including government representation, or, in the case of denominational institutions, members of a religious order. The board may also include officers of the institution—whose president, in the Philippines, may on occasion also be the chairman of the board. Even when he is not a voting member, he generally participates in its deliberations.

Brevet d'études du premier cycle (B.E.P.C.)
The diploma awarded to students completing the first CYCLE of secondary education in school systems modelled on the French pattern, i.e., in grades 9 or 10.

Bursary
An endowment to defray all or part of the expenses of a student at a school, college or university. In a wider sense the term is used synonymously with scholarship and exhibition.

Capacité de droit
A diploma awarded after two years of legal studies to students who need not necessarily hold the BACCALAURÉAT, but must at least hold the *brevet*.

Certificate
Junior School Certificate; Higher School Certificate; General Certificate of Education, 'O' and 'A' levels—see: School Certificate.

Chancellor
A distinguished personage who is the titular, symbolic and formal head of a university where the British type of constitution is followed. Though the office is mainly honorific, the chancellor normally presides at formal meetings of the supreme governing body and at convocations, where he confers degrees. (See also: Vice-chancellor.)

Clearing house
A documentation centre occupied with the collection, the orderly arrangement and the dissemination of information.

College: Junior; Liberal arts—see: Liberal Arts College; *University*—see: University.

(a) A college is an institution of higher education which may be autonomous or part of a university, but which, with few exceptions, provides study facilities only up to the first degree.

(b) A *junior college* offers courses only up to a pre-degree diploma level—in the American pattern two years beyond the completion of secondary education.

Comprehensive school
A term applied to secondary schools in which the entry is non-selective, and which accordingly offer a wide variety of courses at different levels in all subjects of the secondary curriculum. HIGH SCHOOLS may be comprehensive; grammar schools and technical schools are not.

Council, University
See: University.

Courses, professional
Courses that are designed specifically to educate and train for the exercise of a particular profession, e.g., medicine, teaching, agriculture. These may be preceded or accompanied by preparatory, complementary or academic courses of study, e.g., pre-medical courses in medicine, general courses in journalism, and academic or 'content' courses in teacher training.

Credit system: credits; quarter or semester hours of credit
A system designed to establish minimum requirements for a degree or diploma in terms of credits or units for the completion of required and elective courses. The credits are assigned on the basis of weekly hours of instruction and practical work (e.g., one credit for one lecture period or three for two lecture periods and two practicals per week) over a quarter or semester. Each course terminates with an examination and/or other tests of proficiency. Curricular requirements are thus expressed both in terms of a minimum total number of credits or units and of the completion of a minimum number of prescribed and elective courses, each with their own sub-totals of credits or units. (See also: Academic year.)

Cycle

Secondary education is usually divided into two stages or cycles, each of which is concluded by a terminal examination. While there may be some early specialization in the vocational/technical stream of secondary education, in the general or academic stream, specialization generally begins with the second cycle. Synonymous with the first and second cycle of secondary education are lower (or junior) and upper (higher or senior) secondary; and middle and high school. Partial exceptions to the two-cycle system are to be found in Malaya and the Philippines: in the first, secondary education, including the 'sixth forms', has three stages, 3-2-2; in the second, the first stage is not terminal, though in terms of curriculum planning, two years of common general education are followed by two of a differentiated academic or technical education.

Dean

The head of a faculty or other institutional division (e.g., men or women students) responsible for its co-ordinated operation, and chairman of the faculty council and other interdepartmental bodies. He is directly responsible to the academic head of the university. The office may be rotated among heads of departments.

Degree: pass, honours, general honours, research

(a) A university qualification awarded on the successful completion of a major course of studies. It is generally distinct from a DIPLOMA in that the latter, even when awarded by a university, is usually (one exception is that of the diploma in architecture at the University of Saigon) awarded for a shorter undergraduate *or* postgraduate course.

(b) Universities following the British system may award pass (or ordinary), honours or general honours degrees. A pass implies general competence without distinction. Honours imply distinction, usually but not always specialization in one subject, and, in the case of the universities of Malaya and Singapore, an additional year's study in the natural sciences curricula. General honours may be awarded in a course of studies that includes at least two major subjects. In accordance with the level of final examination marks, honours are graded as First Class; Second Class (Upper and Lower Division); Third Class.

(c) A research degree is awarded as a result of an approved course of study, the main purpose of which is to add, by discovery or organization, to the sum of knowledge.

Department

A DIVISION of an institution of higher education responsible for instruction in one main subject, e.g., English, chemistry, electronics, civil engineering. A faculty is generally composed of a number of departments: thus a Faculty of Science may consist of departments of Botany, Chemistry, Geology, Mathematics, Physics and Zoology.

Dialect

One of a number of distinguishable varieties of the same language: speakers of different dialects understand one another. Standard dialects are any dialects designated by government or chosen by popular consent as a preferred mode of communication for certain situations. (Noss, Chapter I.)

Diploma; diplomate
A qualification which may be awarded at various levels, extending from higher secondary, through pre-degree, to post-graduate work. It is, in the French system, used in preference to the term degree for technical and professional courses (e.g., engineering and architecture). In the report it is most frequently used to refer to qualifications other than degrees that lie between the completion of grades 10 and 15. A *diplomate* is the holder of a diploma (though the usage is not sanctified by the *Oxford English Dictionary*).

Discipline (academic)
A major branch of knowledge, e.g., physics, mathematics, history. Hence 'interdisciplinary', an activity, situation or institution which involves collaboration between several disciplines.

Division
According to circumstances, a more or less wide grouping of studies or departments (e.g., division of social sciences; division of commerce and accountancy). The term is also at times conveniently used to refer indiscriminately, within higher education, to faculty, college, school or department, since certain subjects or subject groupings may be provided for by different kinds of divisions in different universities or other institutions of higher education, e.g., the social sciences may be the responsibility of various departments under a faculty of arts; of a separate faculty, school or college; of more than one faculty (for instance, economics, law, social sciences); of an independent institute.

Doctorate (Doctorat)
The doctorate, with the special exception of the doctor's degree in medicine, is a post-graduate research degree requiring the presentation of a thesis embodying the results of original work carried out under professorial guidance. Apart from this general characteristic, the conditions for its award and the minimum period of study required (as specified or in usual practice) vary both according to subject and to the educational system of the country concerned. In several cases, an intermediate post-graduate award (e.g., a master's degree in the Philippines and Thailand, a *doktorandus* in Indonesia) or a certain number of post-graduate diplomas (*certificats d'études supérieures* in Viet-Nam) must be secured before doctoral studies can be begun or completed. But while, because of such differences and other special characteristics, it is not possible to think in terms of complete EQUIVALENCES between doctorates in even the same subject, they usually involve a minimum of three years' study and research after a first degree (four to five years is perhaps a fair average) and are supposed to signify that the holder of the doctorate is capable of carrying out independent and original research in his field. In Vietnamese universities only those holding a doctorate may be appointed to a permanent teaching position, starting as assistant professors.

Drop-out
Pupils discontinuing studies before completing a terminal stage or originally desired level of education (see: Wastage).

Education
The following are the common organizational terms used in the report, listed from lower to higher levels.

(a) *Pre-school:* education in nursery schools and classes and kindergartens given before the age of compulsory or primary schooling.

(b) *Primary:* the first level of education, ranging between grades 1 and 7, but most frequently containing six grades. This is still generally the first terminal stage in a system.

(c) *Secondary:* the second level of education, extending from the completion of primary school to the final stages of education preceding higher education. Secondary education in the region covers between three and seven years, generally divided into the following lower and higher stages: 3-2; 3-3; 3-2-2; 4-2; 4-3 though the first stage may be TERMINAL. The report outlines a model structure of six years' primary schooling followed by a minimum of four years' general secondary education, after which come two to three years of specialized work for university entrance or a career in TECHNICAL or TECHNOLOGICAL fields (see p. 313-17). Secondary schools are understood to include lower and higher, middle and high, junior and senior, COMPREHENSIVE and vocational schools as well as SIXTH FORMS and pre-university classes. Among types of secondary education are the following.

General secondary education: sometimes called academic education, in which specialization is a comparatively late feature of the curriculum, and is related to a wide background of general studies. It is also the main avenue to university entrance.

Technical education: in which specialization in one or more of the applied sciences is the predominant feature of the curriculum.

Vocational education: often used synonymously with technical education, but more strictly limited to training for a specific vocation.

Teacher training: courses which combine the teaching of subject content with the methodology of education in order to train teachers for service in primary or lower secondary schools.

(d) *Higher education:* the third level of an educational system embracing all kinds of institutions offering recognized courses to students who have completed a secondary education (though not necessarily to university entrance level). Such institutions include universities, university colleges, polytechnics, technical institutes and specialized training schools, e.g., schools of forestry, agriculture, navigation, accountancy, etc.

(e) *Further education:* part-time education generally leading to a recognized qualification and undergone for vocational purposes.

(f) *Adult education:* part-time education of adults at various levels.

Elective
A subject, forming part of a course, which is one of a number of options from which a selection can be made; opposed to 'required' or 'compulsory' subjects.

Equivalence
The condition of the academic level of one qualification being judged to be of the same standing as that of another qualification, the requirements for which are familiar. Equivalence is not necessarily sufficient for the exercise of a profession.

Extension
An informal, and not unduly academic, form of EXTRAMURAL activity offering educational programmes of a varied but continuing nature—group work, lectures, radio and television programmes, demonstrations. The term is most frequently used in connexion with agricultural training and demonstrations in rural communities.

Extramural
Educational activities conducted by a university outside the bounds of its own campus, generally of an academic nature, i.e., the lecture or discussion group, and frequently leading to some form of recognition by diploma. A more formal activity than those undertaken by extension work.

Faculty
A more or less autonomous division of a university encompassing teaching and research in a major field of knowledge and generally embracing a number of departments covering particular aspects of the general field.

Foundation
(a) A philanthropic body devoted to educational purposes.

(b) A general term covering a wide variety of endowed educational and research establishments.

Foundation courses
University courses designed, as at Keele University in England, to give a sense of unity and perspective in a wide field of scholarship as a preliminary to more detailed and specialized study.

Freshman
A student during his first year at the university.

Grade
The annual unit of an educational system extending from primary school to higher education. Thus grades 1-6 may represent primary education, grades 7-12 secondary education and grades 13+ higher education. (See also: Age.)

Graduate (verb)
To complete a major stage of the educational system. The verb is used throughout the study in this broad sense, and its use has not been restricted to the English custom of applying it only to the successful completion of a degree course. A *graduate* (noun) has graduated.

Habilitation
In Germany (both Democratic and Federal Republics) to obtain recognition as a qualified university teacher (the award of *venia legendi*) a candidate must successfully complete his *Habilitation*, which involves two to four years' post-doctoral teaching and research experience as an assistant to a professor, and a final examination. Somewhat similar preparatory periods with qualifying examinations exist in certain other European countries—in France the system (AGRÉGATION) is used only for law, medicine, and pharmacy.

High school
An alternative to 'secondary' school. In systems based upon American models it is possible to find Junior High Schools offering the first three, and Senior High Schools the last three years of a six-year secondary course.

Higher School Certificate
See: School Certificate.

Humanities
In the report the term is generally used in its wide rather than its traditional sense, as synonymous with arts or liberal arts, and does not exclude the social sciences. However, in some cases the context makes it clear that there the humanities refer to such subjects as literature, history, philosophy, theology, fine arts.

Inspector of schools
An official responsible, critically or constructively—or both—for maintaining and revising standards of teaching, organization and effectiveness in schools. Such officers bear many designations, from the proud appellation of 'Her Majesty's Inspectors' in the United Kingdom to the more prosaic, but perhaps more encouraging, titles of organizer or adviser.

Institute
The term is used in several different senses made clear by the context:

(a) A centre of research which may or may not have teaching functions or an association with a university. It is usually highly specialized, at most grouping together certain disciplines under one main subject field.

(b) A centre for research and teaching affiliated to a university either as an integral unit or in relation with a department, faculty or school. (In the Philippines certain universities use the term as equivalent to a college or school, e.g., Institute of Business Administration or Institute of Arts and Science.)

(c) A centre for technical or vocational education and training, e.g., technical institute, institute of commerce and accountancy, teacher-training institute, which usually subordinates such research as it may do to its training functions.

(d) An institute of technology which is a university-level institution concentrating on technology and applied science. (See also: University, technological.)

(e) In Burma, specialized institutions of higher education (formed by separation from two multi-faculty universities) are now, as in the U.S.S.R., referred to as institutes, e.g., Institute of Economics, Education, Medicine, Agriculture.

Institution
Apart from its general sense, in the report the term is in context often used as a convenient abbreviation for an institution of higher education. Though at times, as in 'university teacher', the term 'university' has also been similarly used in a wide sense to cover all institutions of higher education, this latter usage has generally been avoided.

Instructor
The lowest academic rank, often used synonymously with demonstrator, though the latter term is sometimes reserved for an instructor or assistant in practical or laboratory work. Graduate students may be appointed to such posts on a part-time basis; and there is frequently a rapid turn-over.

Intermediate
The term is used to indicate various stages of education lying between two usual levels:

(a) In the Philippines it refers to grades 5-6, though for statistical purposes these grades are generally considered part of primary education.

(b) In Burma the Intermediate stage consists of grades 11-12, which in alternative divisions of Arts or Science generally prepare students for higher studies. While the universities have constituent Intermediate sections there are also affiliated Intermediate Colleges. It must, however, also be remembered that many students do not go beyond this stage.

(c) In the report the term 'intermediate' is often used to refer to educational and training levels (particularly in technical/vocational fields) which lie between secondary and full higher education, i.e., grades 11-13/14.

(d) In general educational usage the term is most frequently applied to post-primary schools with a short secondary course.

Junior college
See: College.

Junior lecturer
See: Lecturer.

Junior School Certificate
See: School Certificate.

Language laboratory
A classroom equipped for the teaching of languages, principally languages other than the native language. In such laboratories individual booths for students containing receiving, recording and transmitting apparatus are connected with a central control operated by the teacher who can communicate either individually or collectively with his pupils, either orally, by electronic tape, or by gramophone records. The isolation of the student in his booth permits group as well as individual instruction by the teacher but continual and individual activity by the student.

Lecturer: assistant; junior; senior; part-time; full-time
A teacher in higher education who, with few exceptions (such as a visiting or exchange lecturer), is a regular member of the staff of a particular institution of higher education. A teacher may first be appointed as assistant or junior lecturer, generally working under the guidance of a senior staff member, when the appointment may be considered temporary or probationary. A lecturer may be full- or part-time; but the apparently clear distinction can at times be quite misleading: a lecturer may be regarded administratively as a full-time member of staff, but in fact he may also have other preoccupations, including teaching duties at one or more other institutions. On the other hand, a part-time lecturer may give anything from a nominal to a very substantial part of his time to teaching and working for a single institution.

Lettres
Synonymous with arts or humanities. A faculty of *lettres* may, as in the case of the University of Saigon, in addition to departments of literature, linguistics, philosophy and history, also include such subjects as sociology, psychology and geography.

Level: first, second, third
The three levels correspond respectively to primary or elementary, secondary, and higher or post-secondary education. While with reference to a particular country, the periods of study covered by these levels are those current in its education system, a model proposed by the report (p. 313-17) envisages a first level of six years, a second divided into two stages of four and two years, and a third which goes beyond these twelve years of education, and requires a minimum of three years of study for a first degree. Certain technical/vocational courses that start with grade 11 and may go on to grade 13 or 14 can thus be considered an intermediate level between the second and third, or referred to as post-secondary in the sense that they are preceded by an integral course of general secondary education.

Liberal arts college (College of arts and science)
A college which primarily aims at providing a general education up to a first degree, requiring a minimum combination of both arts and science courses, though major subjects may be selected from either field for more intensive study. However, on occasion, it may also offer courses in certain vocational fields, including commerce and teacher training. In cases where the educational provision stops short of a first degree, the college is generally referred to as a junior college; but a full liberal arts college usually also offers pre-degree diplomas. In the Philippines liberal arts courses toward a first degree extend over four years, and an associateship diploma may be granted after the completion of two years' study.

Licence: en droit; ès lettres; ès science
A degree conferred on fulfilment of the following conditions: (a) in law, a minimum of three years' study, each year terminating with an examination; (b) in arts and social sciences, the award of a certificate of general studies (PROPÉDEUTIQUE), and of four to five certificates of higher studies (*Certificats de licence*); (c) in science, the award of a certificate of preparatory studies (PROPÉDEUTIQUE), and of three certificates of higher studies.

Literacy
'The ability both to read and write' (*Unesco Statistical Year Book, 1963*).

Lycée
A State-supported secondary school (French system).

Master's degree (M.A.; M.Sc.; M.Ed.)
The second degree, awarded on examination subsequent to the bachelor's degree (the first degree) after a further period of study. Exceptions are the master's degree in some Scottish universities, where it is the first degree, and at Oxford and Cambridge, where no further academic study is required—simply a period of retention on the books of the candidate's college. The mysteries of the equivalence of Western masters' degrees cause considerable confusion in countries in the region seeking to assess professional qualifications obtained overseas.

Mathayom Suksa (M.S.)
The Thai term for general secondary-school grades, starting with grade 8 and comprising two cycles of M.S. 1-3 and M.S. 4-5.

Matriculation
(a) In a general sense, matriculation is synonymous with admission to an institution of higher education and it need not involve an entrance examination.

(b) In Burma, the term refers to a specific examination; on the basis of results in this, students are admitted to institutions of higher education. It may be taken not less than one year after the completion of a total of nine years' (four plus five) education, terminating in a school-leaving certificate. While a number of high schools provide preparatory matriculation classes, apparently a sizable number of students also prepare and appear for the examination privately.

Medical assistant, para-medical personnel; medical technician
(a) All those who have had some form of general medical education or training below the professional or degree level are, in the report, covered by the term 'medical assistant' in the singular and 'para-medical personnel' in the plural: e.g., *officiers de santé* in Cambodia and Viet-Nam.

(b) *Medical technicians* are those primarily concerned with auxiliary aspects of the practice of medicine, including, e.g., pharmacy, hospital administration, certain types of laboratory work, radiography and the making of medical instruments and appliances. Their training may, in various instances, extend beyond the assistant level to a full graduate qualification, e.g., in pharmacy or hospital administration.

Mobility, academic
(a) In a quite general sense the term refers to the facility with which members of different educational institutions may and do move from one to another for various appropriate purposes, e.g., more advanced or different types of study; exchange to promote collaboration; research; experience of teaching in another environment.

(b) In a specific sense, it refers to the flow of teachers to and between institutions of higher education within a country, a region, or the academic world at large. It indicates the extent to which individual institutions of higher education are able: (i) to recruit teachers on a nation-wide basis rather than having to rely largely on producing their own; (ii) to exchange teachers for purposes of experience and collaboration; (iii) to attract scholars from abroad, including their own expatriate nationals.

Multi-faculty
See: University.

National language
Any standard language which has primary governmental sanction within a given country. Where two such standard languages have such sanction, e.g., Khmer and French in Cambodia, the term is restricted to the more indigenous language (Khmer). In the Philippines, although Visayan claims more speakers than Tagalog, it lacks the official sanction of the latter, and hence does not qualify as a national language, but as a VERNACULAR. (Noss, Chapter I.)

Normal school
A teacher-training school or college.

Numerus clausus
Literally, 'closed number', hence in academic terminology a numerically restricted entry to a course of studies. The restriction is usually adopted to avoid overcrowding and is based on an assessment of the optimal or upper limit of facilities available for the course. It may, however, also be adopted in response to objectives of manpower planning or to employment opportunities.

'O' level
The 'Ordinary' level of the General Certificate of Education, awarded after a period of, normally, five years' secondary education. (See: School Certificate.)

Pass
See: Degree.

Pedagogy
(a) In a general sense used as referring to all types and aspects of teacher training.
(b) The specialized discipline of educational theory and practice.

Polytechnic
An institution providing technological/vocational education in a variety of special fields, and usually at more than one level. It often includes courses in commerce, and usually has facilities for part-time study. Qualifications awarded may range from certificates for craftsmen, apprenticeship and short specialized training courses, through secondary and post-secondary diplomas, to professional awards which approximate or are at university level. The term 'technical college' or 'institute' is often used to refer to the same type of institution, the possible distinction being mainly one of size and of level of provision.

Post-graduate
Appertaining to study beyond the first degree. Post-graduate studies are, confusingly enough, undertaken by graduates.

Prathom
The Thai term for primary grades, increased from four to seven at the end of 1960 in conformity with the Karachi Plan.

Prefect
A term used in British systems to indicate a senior student, usually a member of the SIXTH FORM with disciplinary responsibilities and consequently certain privileges—of attire, freedom of movement and study accommodation.

Primary (lower, upper, intermediate)
See: Education.

Principal
The academic and executive head: (a) of a school; (b) of a college.

Profession
Used here to indicate any calling or vocation, the exercise of which requires, in its upper branches, a degree or an equivalent qualification awarded by examination.

Professional (qualification)
Relating to entrance to, or the exercise of, a profession. Professional qualifications include not only degrees, but other awards, whether made by government or representative private bodies, required by law.

Professional education
See: Courses, professional.

Professor; Associate; Assistant
(a) *Professor:* the head of a department, holder of a chair or senior university teacher in charge of teaching and research in a particular subject.

(b) *Associate* or *Assistant:* lower academic ranks among which, if they are not considered equivalent, Associate has the higher status.

Programmed instruction
A shortened form of 'programmed *self*-instruction'. This is an automated self-tutor, often in the form of booklets, which leads the student by very short logically related steps (frames), resulting in few errors, so that he practises correct responses rather than errors. Responses are reinforced immediately by knowledge of results, so that he makes successively closer approximations to the responses which are the desired goal.[1]

Promotion (automatic)
A system of progression through a school course according to which all pupils are advanced from grade to grade on the basis of chronological age, attainment being no factor in the process. The system is current in Malaya up to grade 9.

Propaedeutic (propédeutique)
A preparatory course or period of studies after admission to the university which must be completed satisfactorily before a student is permitted to proceed with further studies. In addition to its preparatory function, which may have remedial elements, it usually also serves as a selection mechanism about a year after admission to the university. It is a feature of systems based upon the French model.

Quarter
See: Academic year.

Rector (Recteur)
(a) The head of a university and chairman of its academic council, which consists of representatives from all faculties.

(b) In Burma, rectors, under the new University Education Law (1964), are heads of universities of arts and science and of certain other institutes of higher education. Previously, the rector of the University of Rangoon shared responsibilities for the direction of university affairs with the vice-chancellor, who was the academic head of the university.

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[1] Wilbur Schramm, 'The newer educational media in the United States', *New Methods and Techniques in Education*, p. 11 (Paris, Unesco, 1963. Educational Studies and Documents, No. 48).

Registrar
(a) The executive officer of the university whose main functions include keeping the university records, preparing official business for university bodies, and carrying out the administration of university business from enrolment to graduation.

(b) In certain universities his functions are more limited, as for instance at the University of the Philippines, which also has a secretary.

Repeater
A pupil who is repeating the work of a course or part of a course which he has covered unsuccessfully at least once. This process is known administratively as 'retention'.

Sandwich course
A form of course organization, largely in technical education, in which periods of instruction 'on the job' alternate with more theoretical institutional training.

Sardjana
The degree awarded in Indonesia after the successful completion of a minimum of four to five years of higher studies. In several disciplines it is preceded by the preliminary qualification of *sardjana muda* or *bakaloreat.*

Sardjana muda
A first higher qualification awarded in Indonesia usually after the satisfactory completion of three years of higher studies (following a total of twelve years of schooling). However, with certain exceptions (e.g., in teacher training) the award is not terminal, signifying only completion of the first stage toward a degree, the *sardjana.* (See also: *Bakaloreat.*)

School
The term is used according to context to refer to: (a) certain types of higher education institutions, e.g., schools of medicine, education, engineering; (b) educational institutions at the primary and secondary level.

School Certificate
An examination normally taken after five years of secondary education. In English practice this may be preceded by a Junior School Certificate (after three years) and possibly followed by a Higher School Certificate (after seven years). Alternative titles for School and Higher School Certificate are: General Certificate of Education—'O' (Ordinary) or 'A' (Advanced) Level.

Science: pure and applied; natural; social
(a) *Pure and applied science:* the terms are used with due recognition of their inadequacy as well as the convenience of their generally accepted connotation. The first, for which 'basic' is often used as a synonym, refers to all those disciplines whose first objective is knowledge, irrespective of whether it has a present or future practical application. The second refers to those which primarily aim at understanding and discovering ways of using knowledge in particular types of practical situations, though this may and does frequently lead to fundamental investigations and new knowledge, which again may, or may not, have any practical application.

(b) *Natural science:* this term, unless otherwise indicated, is generally used in its widest sense, including mathematics. However, where enrolment or graduation statistics are concerned, data for certain subjects may in one instance have been counted under science or natural science and in another under arts, because, for example, departments of mathematics or geography may equally be situated in a faculty of arts or of science, or in both.

(c) *Social sciences:* the term is generally used to denote all disciplines dealing with human behaviour and social organization. But again, for statistical and administrative purposes these may all form part of an arts faculty, or certain of them may be included in science faculties, e.g., psychology may be in the faculty of arts or of science, and history will frequently be found in a faculty of arts rather than of social sciences.

Selective/non-selective
Terms applied, usually to a secondary school, to indicate whether or not a required standard of academic attainment is a condition of admission.

Semester
See: Academic year.

Seminar
A group of advanced students meeting for discussion under the direction of one or more staff members: an enlarged and less personal form of the TUTORIAL. In the seminar the subject is possibly of more significance than the individual student's reaction to it.

Senate
See: University.

Setting
A form of school organization whereby pupils are placed in various classes or 'sets' for individual subjects according to their attainment in that subject. Setting may be deemed a form of STREAMING in which the pupil is placed in different streams for different subjects, not in one stream for the whole of the grade year.

Sixth form
A term used in systems patterned on the English model to distinguish pupils in the last two years of secondary education, i.e., after passing the School Certificate examination and whilst preparing for the Higher Certificate examination. The two years are usually designated Lower and Upper Sixth. There is a general correspondence with the two years of preparation for the *baccalauréat* under the French system. In Malaya sixth forms cover grades 12 and 13, in Singapore grades 11 and 12.

Streaming
The process, in schools with a more than one-class entry, of grading students within the available number of classes according to ability, hence 'A' stream, 'C' stream, etc. The term is sometimes misleadingly applied (where such combinations of studies are still practised), to grouped studies, i.e., arts stream, science stream, technical stream, etc.: these groupings, based upon content rather than their

ability, are more properly termed 'sides', 'sections', 'divisions' or 'courses'. (See also: Setting.)

Studium generale
A course of higher studies specifically designed to complement specialization with a liberal education. It may be optional and/or without an examination, or form a prescribed curricular requirement. (See also: Foundation courses.)

Subjects
Used as synonymous with disciplines. *Main* subjects or *major* disciplines are comprehensive areas of study including many specialized parts, thus chemistry or psychology are both major disciplines, but organic chemistry or industrial psychology are not.

Supervisor
(a) The Cambridge equivalent of tutor; (b) an equally unattractive synonym of INSPECTOR.

Syllabus
Prescribed study and training requirements for the satisfactory completion of a course or the award of a degree or diploma.

Teaching machine
A mechanical device, ranging from a scrambled book to an electronic instrument, for presenting the 'frames' or individual steps of PROGRAMMED INSTRUCTION and regulating a student's progress in accordance with the success or failure of his responses. 'The programme is the important ingredient, and the teaching machine is only a case to hold the programme.'[1]

Technical Assistance
The system under which, through the United Nations Technical Assistance Board (UNTAB) working through the Specialized Agencies such as Unesco, WHO, ILO, and FAO or through the Colombo Plan, and numerous bilateral schemes, the services of specialists[2] and advisers are made available for specified periods to less developed countries.

Technical education
A type of education which emphasizes training in technical procedures and skills, sometimes including agriculture and other non-industrial specializations, but more often limited to training for industry.

Technological education
The highest level of education in engineering or applied science which includes a sound understanding of scientific principles in relation to practice, and is thus distinct from technical education which is designed for executive competence in particular fields under the direction of technologists.

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[1] Wilbur Schramm, op. cit.
[2] The recognized term for these specialists is, unhappily, 'expert'.

Term
An integral part of the academic year, which, where the word 'term' is in use, is divided into three more or less equal terms followed by a long vacation. (See also: Academic year.)

Terminal
A course, stage of study or training is said to be terminal when, while it may qualify for entry to a higher level, it is in some sense a self-contained unit. Many who complete it do not go any further, and it is therefore desirable, though not always the case in practice, that such periods should in themselves reach definite goals of education or training.

Training college
An institution providing courses, often of two years' duration, leading to the award of a licence to teach. In English usage the term corresponds with the French *école normale*, both types of institution providing training for teachers of primary and lower secondary schools.

The American *teachers college* (as found in the Philippines) combines the functions of the training college and the university department of education (for graduate secondary-school teachers) (English pattern) and the *école normale* and the *école normale supérieure* (French pattern).

Tutor; tutorial
A *tutor* is a member of a university staff to whom is entrusted the special tuition of individual students, either singly or in groups of not more than four, a process known as a *tutorial*. A *moral tutor* is concerned with the welfare, but not the instruction, of his students.

Undergraduate
(a) Noun: a university student pursuing a course of studies toward a first degree or equivalent qualification; (b) adjective: that which is at a university level extending up to the first degree.

Units
A quantitative measure assigned for the satisfactory completion of a course, the amount depending upon the frequency and duration of classes, together with the required reading, writing or other assignments. The value of a unit is further defined by the length of the course, extending over a quarter or term, a semester, or a full session. (See also: Credit, Credit hours.)

University: Court; Council; Senate; Technological; Multi-faculty
(a) *Court:* the supreme governing authority of a university; a large body including, in addition to wide participation from within the university, alumni of the university, persons of distinction or importance in the community, representatives from educational and learned societies, government, and other relevant bodies. It meets annually to receive the financial accounts and other reports on the work of the university and to appoint certain university officers. It may also meet specially for other purposes.

(b) *Council:* (i) generally having a mixed lay and academic membership, this executive body administers the finances of the university, confirms the recommendations of the senate for academic appointments, authorizes academic regulations proposed by the senate, and, in consultation with the senate, generally appoints the vice-chancellor; (ii) the term 'academic council' is sometimes used to designate the chief academic authority otherwise referred to as the 'senate' (see below).

(c) *Senate:* composed largely of heads of departments with some other staff representation, this body, of which the vice-chancellor is *ex-officio* chairman, is the chief academic authority, though subject to the powers of the council. It approves and co-ordinates the work of the faculties, makes recommendations for academic appointments, and is responsible for the teaching and discipline of students.

(d) *Technological (or Technical) university:* an institution of higher education mainly devoted to technological and applied science disciplines, but also making some provision for teaching in the basic natural sciences, the social sciences, the humanities, and engaging in scientific research which is largely but not exclusively applied.

(e) *Multi-faculty university:* a university whose faculties or schools and colleges cover most if not all of the major disciplines. The strength and scope of these divisions, however, may vary, and post-graduate work and research may be highly developed in only a few.

University college
A constituent or affiliated college of a university which, while it may have some administrative autonomy, operates under the academic control and supervision of the parent university. This usually also means that the university retains the sole power to grant degrees and conduct final examinations for them.

University Grants Committee (or Commission)
An autonomous body that is an intermediary between universities (and possibly other institutions of higher education) and government. It gives its advice on university finance, is the channel through which individual financial allocations are made, and is consulted in the preparation and execution of plans for the development of higher education. The concept is British: similar bodies set up elsewhere vary somewhat in their natures and functions, and other adaptations may well be feasible: the National Education Council of Thailand is a case in point.

Vernacular
Any indigenous language other than the NATIONAL LANGUAGE. (Note that this definition is at considerable variance with the general usage of the term 'vernacular'. Thus Visayan, Karen and Hokkien are vernaculars.) (Noss, Chapter I.)

Vice-chancellor
The academic head of a university and *ex-officio* chairman of its senate.

Vocational
Descriptive of an institution or course, usually at the second level, e.g., a school of building or a course in typewriting, which trains for a specific craft, trade or occupation. The term is not properly applied to institutions training for the professions. A technical school trains for many vocations, a vocational school for one or two named vocations or trades.

Wastage, academic
Failure to complete a course, whether from academic, psychological or economic reasons. The term is applied to all levels of education. Wastage implies a consequential loss of investment and of talent.

Workshop
A form of training, usually of an in-service character, in which practical activity is as important as instruction and discussion. A 'workshop' is just as possible in, for instance, journalism as in industrial arts.

II. Brief account of the history and methodology of the study

In 1959 Unesco and the International Association of Universities formed a Joint Steering Committee for the development of a concerted programme of research in higher education. The committee was composed of three members from each organization, the Director-General of Unesco and the President of the IAU being co-chairmen. Mr. Douglas Aitken of the IAU was appointed secretary and has served in that capacity ever since. The first research project formulated by this committee, with the collaboration of the Carnegie Corporation of New York, was an International Study of University Admissions which was begun in September 1960, the first volume of the study by Frank Bowles being published late in 1963. As a second project, the Joint Steering Committee, with the collaboration of the Ford Foundation, initiated the present study on The Role of Institutions of Higher Education in the Development of Countries in South-East Asia which was begun in September 1961.

The complexity and the comprehensive nature of the project led to a decision to undertake it in two stages, a first exploratory and preparatory phase, and a second phase in which investigations would be carried out along lines determined by the first.

For the first phase, a team of three specialists was recruited: an experienced British university administrator to be senior consultant and the chairman of the Preparatory Committee of Experts (the late Sir John Lockwood, Master of Birbeck College and former vice-chancellor of the University of London); a South-East Asian economist and educator (Dr. Hla Myint, former rector of the University of Rangoon, then at Oxford University); and an educationist from the Middle East to be director of research for the project on a full-time basis (Dr. Matta Akrawi, former president of the University of Baghdad and a senior member of the Secretariat of Unesco).

This stage of the project was initiated by visits by Sir John Lockwood and Dr. Akrawi to all the countries of the region during September 1961 when the concept of the study was presented to the national authorities, and their co-operation solicited and promised. Visits to some institutions of higher education were also made, and talks with leading educationists held. Work was begun on the collection, which was subsequently steadily continued, of a substantial body of documentation.

In December 1961 Sir Alexander Oppenheim, then vice-chancellor of the University of Malaya, generously placed a set of offices in the University at the disposal of the study.

At the beginning of 1962, a second and longer series of visits by Sir John Lockwood, Dr. Hla Myint and Dr. Akrawi were made. Further information was thus collected and at the end of February a preparatory committee of experts met at the University of Malaya to discuss proposals for planning the second stage of the study. These members were: Dr. Adul Wichiencharoen, secretary-general, Thammasat University, Bangkok; Mr. Aminuddin bin Baki, Chief education adviser, Ministry of Education, Kuala Lumpur; Dr. R. S. D. Pusponegoro, president, University of Indonesia, Djakarta; and Dr. V. G. Sinco, president, University of the Philippines.

Dr. N. Q. Trinh, rector of the University of Saigon, was unfortunately unable to attend. Sir Alexander Oppenheim acted as host and took part in the work of the committee, as did Dr. Hla Myint and the director. The Ford Foundation was represented by Dr. George Gant, Unesco by Dr. Malcolm S. Adiseshiah and Mr. Welling, and the IAU by Mr. Aitken.

As a result of this meeting, the Joint Steering Committee was able in July to plan the second phase of the study on the basis of a manpower study to measure the needs, both quantitative and qualitative, of the region; an examination of the extent to which institutions of higher education were meeting these needs; and a study of what might be done to put these institutions in a position to meet the challenge of national development.

In December of the same year Mr. Guy Hunter, of the Institute of Race Relations, London, who—together with Professor Harbison—had prepared a manpower assessment for East Africa earlier in the year, was engaged as consultant to make the manpower study referred to above and he made his first visit to the region at the beginning of 1963.

In the meantime it was reluctantly decided that a comprehensive and detailed questionnaire which had been prepared to cover many missing fields of information was not likely to meet with an adequate response, and finally a brief *pro forma* requesting basic information about courses offered, and the numbers of staff and students, was despatched to 515 institutions in the region. To this 199 replies were eventually received. The wide lacunae thus exposed were in fact confined almost entirely, as might be expected, to Indonesia and the Philippines with their numerous private institutions—from the former, 49 replies were received to 188 inquiries, from the latter 105 replies to 278 inquiries.

At the conclusion of this phase at the end of 1962, Dr. Akrawi found himself no longer able to continue his association with the study and in March 1963 Dr. R. M. Sundrum, formerly professor of statistics in the University of Rangoon, took up his duties in Kuala Lumpur as director. In July, Mr. Moehamad Akbar Djoehana, formerly deputy co-ordinator for the East-West Major Project of Unesco, was appointed deputy-director.

During the first part of 1963, additional documentation on higher education and related aspects of the region was accumulated, and visits were made to Bangkok and Singapore. The main task, however, was to prepare a framework which would indicate the main lines which the study should now take, and, accordingly, a very detailed outline was prepared by Dr. Sundrum for study at the first meeting of the International Commission of Experts which had been appointed to carry on the work initiated by the Preparatory Committee of Experts.

His Highness the Sultan of Jogjakarta accepted an invitation to become Honorary President of the Commission, but official duties in Indonesia subsequently made it impossible for him to attend its meetings. The members of the commission were:

M. le recteur Jean Capelle, formerly Directeur-général de l'Organisation des programmes scolaires, Ministère de l'éducation nationale, France;

Professor G. P. Gorshkov, professor of dynamic geology, University of Moscow, U.S.S.R.;

M. Lê-Văn-Thới, dean of the Faculty of Science, and formerly rector of the University of Saigon, Viet-Nam;

The late Sir John Lockwood, formerly master of Birkbeck College and one-time vice-chancellor of the University of London, United Kingdom (chairman);

H. E. Mom Luang Pin Malakul, Minister of Education, Thailand;

Professor A. Milthers, rector of the Royal Veterinary and Agricultural College, Copenhagen, Denmark;

Dato Sir Alexander Oppenheim, formerly vice-chancellor, University of Malaya;

Dr. Vincent G. Sinco, former president, University of the Philippines;

Dr. John C. Warner, former president of the Carnegie Institute of Technology, Pittsburgh, U.S.A.;

Dr. Hla Myint, lecturer in economics, University of Oxford, and formerly rector of the University of Rangoon, Burma; and

Professor Ungku Abdul Aziz bin Abdul Hamid,[1] professor of economics in the University of Malaya.

The commission met at Kuala Lumpur in August 1963[2] and considered in particular the general balance of the study and the form to be taken by the final report. It recommended changes and new emphases to give fuller expression to concern for social and cultural as well as economic aspects of development. Subsequently Mr. Guy Hunter made a second round of visits to Burma, Cambodia, Thailand, Viet-Nam, the Philippines and Malaysia at the end of the year; and Dr. Ruth Wong, director of the school of Education, University of Malaya, undertook two missions; to the Philippines, Sabah and Sarawak in February and March 1964 and to Burma, Cambodia, Viet-Nam and Thailand in April.

Mr. Djoehana left the study in January to return to Unesco in Paris, and in March Dr. Sundrum, director of the study, also left to take up an appointment at the Asian Institute for Economic Development in Bangkok. He was succeeded by Mr. Howard Hayden, head of the Division of Comparative Education, Unesco, and at the same time Mr. Rafe-us-Zaman, of the International Association of Universities, was appointed assistant director.

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[1] Neither Dr. Hla Myint nor Professor Aziz was able to attend commission meetings after 1963.

[2] At this, as at all meetings of the commission, representatives of the Ford Foundation and the Steering Committee, including one of the co-chairmen, Dr. Cyril James, principal emeritus, McGill University, Canada, and president of the International Association of Universities, Mr. Willem H. Welling, chief of the Division of Higher Education, Department of School and Higher Education, Unesco, and Mr. Douglas J. Aitken, secretary to the Joint Steering Committee, were present and most actively engaged.

The implementation of the study was naturally complicated by the necessity for these new appointments, though the difficulties inherent in such a situation were mitigated by the loyal and unflagging co-operation of the small staff in Kuala Lumpur. It was not altogether possible for the concepts, techniques and selected material of a highly skilled demographer, himself taking over from a specialist in university administration, to be fully assimilated and developed by a comparative educationist with a very different background and approach to the general range of educational problems.

It may be useful at this point to mention other problems in addition to the changes in directorship which the study has inevitably encountered. Not least of these are political factors which have impeded the exchange of persons and information between certain countries and have affected, in greater or lesser degree, the study of higher education and developmental planning in Burma, Laos, Viet-Nam, Cambodia and Indonesia, and which have not been without effect in many regional relationships. In some cases, States have been unable to furnish documentary evidence as to their new concepts and practices, and have been unwilling to subject them to what they would not unreasonably consider premature analysis and evaluation.

Many other difficulties might be cited: the very understandable aversion of authorities to answer yet another questionnaire added to those submerging their desks, and the equally understandable difficulty of acquiring data without recourse to such a technique. The study has had to make the best of what it has been able to acquire and in many cases data are illustrative rather than comprehensive. Attempts made to secure special studies in summary form on such topics as experiments in the reform of curricula, analysis of costs by main fields of study and the selection of students and their socio-economic origins were not successful within the time limits it was necessary to impose.[1]

It is easy to be wise after the event, but it is difficult not to resist the conclusion that had a correspondent or a modest data collecting group been established in each country covered by the study, its comprehensiveness would have been considerably enhanced. Furthermore, while the documentation centre of the study now includes well over 2,000 items, it has been a formidable task to receive, acknowledge and process this material and to facilitate reference to it. The abstraction, storage and retrieval of data have been, save to a very limited extent, far beyond the capacity of the present organization,[1] and it is clear that a study of this nature warrants the employment of a specialist in this field with the necessary equipment, from the very inception of the project.

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[1] Some compensation for this situation was afforded by the services rendered to the study by two members of the staff of the University of Malaya. Mr. Fred Hutchings, former city librarian of Leeds and treasurer of the Library Association, a visiting consultant to the university on library education, was most generous, prolific and formidably expert in the advice he tendered and the literature he supplied on university libraries. Dr. Lim Chong Yah, of the Department of Economics, despite heavy pressure from university duties, furnished a commentary on the various economic sections of the report, which has always been of value, sometimes of comfort, often an incentive to further thought. Dr. Lim Chong Yah also contributed the Note on the finances of the University of Malaya which concludes Appendix III.

Finally, the pressure of work during the last eighteen months of the study has been such that it has not been possible for the original contacts with academic authorities in the region, so well laid in the early stages of the project, to be maintained; instead it has been necessary to rely mainly upon the visits of the consultants—who everywhere received the warmest and most helpful hospitality —to meet friends of the study and secure recent information. The director was able to pay a flying visit to Singapore, largely to gather the latest information on the progress of the Singapore Polytechnic, and the assistant director spent a crowded and profitable week in Indonesia. Three visits have also been made to Bangkok: the assistant director was able to take advantage of an invitation to attend the Fifth General Conference of ASAIHL, and in June 1965 the director attended the principal meetings of the Working Party preparing the Asian education model for the meeting of Asian Ministers of Education in November 1965. This made it possible to gain a most useful and stimulating comparison between the work of the study and the conclusions of the Unesco planning missions, and to gather expert views on the approach to over-all educational planning in Asia. But it will at once be clear that a closer contact with representative institutions throughout the region would have been of inestimable benefit to the study at a time when it was a case, not of finding out what questions to ask, but of asking them, and worrying out the replies. It is hoped that these comments may be of some service when other studies of this nature are undertaken.

Reverting to the progress of the study, the second meeting of the Commission of Experts was held in Bangkok in August 1964. For this meeting a new pattern for the final form of the report had been evolved, based, as far as possible, on the material and data already collected. This framework was discussed in detail, revised and approved, and the commission was also able to review the studies just completed by Dr. Wong and Mr. Hunter. It was learned that Dr. Richard B. Noss, scientific linguist with the School of Languages and Area Studies, Foreign Service Institute, Department of State, Washington, D.C., had accepted an invitation to act as consultant on the language problems of higher education in the region. This he subsequently visited from September to December, submitting his report in February 1965. Mr. Hunter and Dr. Noss were in particularly close contact with the Kuala Lumpur office, which they made their headquarters during the period of their travels in the region. Mr. Hunter dealt with more than 350 queries sent by post when subsequently remitting drafts of his chapters as they were written, and Dr. Noss was able to complete the major portion of his study, which involved many valuable discussions, before returning to the United States.

With agreement reached on the pattern of the study, it was decided that a first version of the report should be drafted and circulated to the Commission of

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[1] At its maximum the staff in Kuala Lumpur consisted of two international staff, the director and assistant director, and, locally recruited, an administrative officer, a research assistant, a documentalist and two typists. All locally recruited staff were, in the best traditions of Chapter 6, women.

Experts in preparation for a final meeting of the commission to be held in April 1965; the time between September and March was consequently spent in preparing this draft. This meant that work on the country profiles, which it would have been logical to complete before the preparation of the draft, had to be largely suspended, material being incorporated either directly into the report or preserved for subsequent use in developing the profiles.

It may be helpful to describe the method of drafting adopted. On the basis of a detailed analysis of the content and argument of the report, the introduction and Chapters 1, 2,[1] 3, 5, 6, 7 and 11 were written by the director; Chapters 4, 8, 9 and 10 were drafted in the first instance by the assistant director and subsequently revised, added to and edited by the director. Chapters 12 and 13 were planned in considerable detail and the writing shared.

The first draft of the report, some 780 mimeographed pages, was duly despatched to the commission before its final meeting in Kuala Lumpur in April 1965 when it was considered both with regard to balance and to detail.

As a result of this process, various changes in the pattern were agreed, including the amalgamation of certain original chapters, the transposition of some sections, and a few changes in emphasis, while the opportunity was also taken to correct errors of fact and detail pointed out by individual members of the commission. The Commission of Experts for their part, after intense deliberation, compiled a list of suggestions and recommendations merging from their study of the report. This list forms part of the prefatory matter of this volume. It remained to produce a final version of the report before proceeding to complete the country profiles. The process of consultation over revision and editing developed into a highly intricate system of exchanges: it became most difficult to assess the optimum moment for arresting what might be considered a game of academic badminton between director and assistant director as freshly amended drafts and re-drafts shuttled to and fro. The report was completed and despatched to the Steering Committee on 31 October 1965.

Meanwhile a draft outline for the country profiles, which had been drawn up in April 1964, had, in most cases, been slowly filling out with data and information collected from a wide variety of more or less reliable sources, and this was verified and sifted as time permitted during intervals between bouts of drafting. Indeed, in order to test the feasibility of the methodology a profile for Thailand had been completed in draft by August 1964, and this appendix closes with the list of contents of this preliminary essay in developing a profile to indicate the nature of the approach to the contents of Volume II of this study.[2]

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[1] Chapter 2 with some assistance from notes prepared by Mrs. Daroesman, documentalist to the study who left in December 1964 to join the Malaysian Economic Centre at the University of Singapore.

[2] The content has not been appreciably altered, but subsequent changes in the arrangement of the profile have been made.

HIGHER EDUCATION AND NATIONAL DEVELOPMENT IN THAILAND

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III.1 Observations on the financing of higher education

The studies in depth on high-level manpower and language problems contributed by Hunter and Noss need to be supplemented by a number of further specialized inquiries, not the least important of which would be a survey of the financing of higher education.

There are two aspects of this theme: (a) the amount of the national education budget allocated to higher education, and its relationship to financial provision for the other levels; and (b) the nature and size of the costs involved in building, equipping and operating existing and new third-level institutions.

The many obstacles in the way of making any comparative study of third-level finance will at once spring to mind. In the two countries with large numbers of private institutions, the Philippines and Indonesia, financial details are in many cases unobtainable. In all countries there are many factors that hinder any useful form of comparison—national and *per capita* incomes; the levels of the purchasing power of money and standards of living; the relative position of teachers' salaries within the professional hierarchy; the degree of emphasis on the arts, on science and medicine, and on research; the siting of the institution in big cities or small towns; the standards of accommodation and equipment considered desirable; the quality of the teaching provided; and the productivity of the system. Thus the fact that Malaya and Singapore spend roughly four times as much *per capita* on higher education as most other countries in the region[1] is a reflection of high *per capita* income and national standards of living, and of the cost of staff salaries at a relatively high regional level. On the other hand there may well be some connexion between high expenditure and graduation rates that are roughly double the average for the rest of the region.

Again the attempt to interpret such data as are available to compose Table II,[2] as the notes to that table reveal, is an extremely complex matter. When figures can be obtained at all, do they refer to deficiency financing by government, or

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1. See Table III, p. 473.
2. Recurrent per pupil expenditure from public funds—all levels.

TABLE I. Distribution of public expenditure on education (regional figures)

Country	GNP expenditure on education		Central government expenditure from budget on education		Percentage distribution of students between levels				Percentage distribution of education expenditure between levels		
	Year	Percentage	Year	Percentage	Year	First	Second	Third	First	Second	Third
Burma	1960	2.0	1963	11.5	1958	74	25	1	55	34	11
Cambodia	1962	4.7	1962	20.0	1962	95	5	0[1]	68	24	8
Indonesia	1960	1.3	1960	5.6	1961/62[2]	92	7	1	62	21	17
Laos		...	1961	20.7	1963	96	4	0[1]	65	22	13
Malaya	1963	3.5	1963	16.8	1957[3]	81	18	1	76	19	5
Philippines	1963	2.9	1963	25.9		...	...	...	...	...	...
Singapore		...	1962	23.4	1962	78	19	3	65	19	16
Thailand	1963	2.7	1963	18.7	1962	90	9	1	60	29	11
Viet-Nam	1962	1.2	1963	4.3	1962	87	13	•	53	30	17

Source: *Educational Situation in Asia* (first draft), figures collected by the Ministry of Education, Japan, from a variety of official sources.

1. Less than 0.5 per cent.
2. Editorial figures based on URAT report.
3. The last year for which the *Report of the Department of Education*, giving comparable figures for the distribution of students and expenditure, is available.

TABLE II. Recurrent per pupil expenditure from public funds (regional figures, in U.S. $)

Country	Year	Parity rates with U.S. $	Primary	Secondary			Universities
				General	Vocational	Teacher training	
Burma[1]	1963	4.39	12.1	27.8	—	—	282[2]
Cambodia[3]	1963	35.0	30.8 *31.4*	171.7 *185.7*	319.8 *455.7*	—	570 *855.7*
Indonesia	1961/62	45.0	8.0	Junior Senior 24.2 41.8	Junior Senior 68.0[4] 56.1[4]	General Vocational 150.0 214.0	283.4
Laos	1963	240.0	7.1	27.1	75	—	229.1[5]
Malaya	1962	3.3	43.1	75.6	130.0	548.0[6]	1 324.0
Philippines	1961/62	4.0	20.6	28.3	135.3	—	268.9[7]
Singapore[1]	1962	3.6	87.4	116.8	—	—	1 298.2[8]
Thailand	1960	22.2	10.4	44.9	51.1	98.0	317.0
Viet-Nam	1963	60.0	18.0	61.7	241.7	—	150.0[9]

Source: Country reports of the Unesco Regional Advisory Teams.

1. Figures taken from *Educational Situation in Asia* (first Draft, May 1965); statistics collected by the Ministry of Education, Japan, from various official sources.
2. Independently calculated for 1964.
3. The first of the bracketed figures are those furnished by the Educational Planning Office to the Unesco Team. Those printed in italics include upward revisions by the team to cover administrative costs and a number of additional third-level institutions.
4. The anomaly of *per capita* costs for junior technical education exceeding those for senior technical education can only be explained, if at all, by a lowering of costs owing to the much larger numbers in the senior technical high schools.
5. These figures relate to the School of Medicine, the Royal Institute of Law and Administration, and the secondary teachers' training sections of the Vientiane Pedagogical High School and the Institute of Buddhist Studies.
6. Including allowances to teachers in training.
7. This figure is not taken from the URAT report, but represents the *per capita* costs at the University of the Philippines after deducting the cost of non-collegiate students (in attached schools).
8. The actual figure given in the Japanese study ($332.5) includes assisted institutions, and therefore presumably divides government expenditure, including a small block grant to Nanyang University, by the total number of enrolments in all institutions. The result is unrealistic since most of the cost in aided institutions is met from other sources. The figure quoted is taken from the *Annual Report of the University of Singapore* for 1962.
9. Apparently calculated from a gross enrolment, including multiple registrations and many part-time students.

TABLE III. Summary of findings on investment and recurrent expenditure per student in certain African institutions of higher education (very crude approximations, in U.S. dollars)

Subject	Arts	Science	Medicine	Agriculture	Technology
Investment					
Buildings for departments	700	1 550	3 950	2 800	1 950
Buildings for housing	2 800	2 800	2 800	2 800	2 800
Buildings for library	280	280	280	280	280
Buildings for services	560	560	560	560	560
Equipment for departments	70 [10][1]	390 [25]	980 [25]	1 400 [50]	980 [50]
Equipment for housing	280 [10]	280 [10]	280 [10]	280 [10]	280 [10]
Equipment for library	140 [50]	140 [50]	140 [50]	140 [50]	140 [50]
Total investment	4 830	6 000	8 990	8 260	6 990
Recurrent expenditure	1 100	2 100	2 800	2 800	1 700

[1] Figures in brackets indicate percentage of investment in corresponding buildings.

to gross cost? Are post-graduates included in the enrolment figures used in the calculations? Which institutions are covered by the data, which omitted? Has allowance been made for external aid in the form of staff, equipment or fellowships? Do the figures of expenditure include a share of administrative costs, or of scholarships abroad—a heavy item in, for example, Laos and Cambodia?

A penetrating exploration of these fields would indicate a most useful project for inclusion in the programme of the proposed Institute of Higher Education and Development: certainly a long, expert and co-operative inquiry would be of great value to planners at both national and institutional levels.

Indeed in the wider field of Asia a beginning has already been made in the Draft Asian Model, a study of 'Perspectives of Educational Development in Asia' presented to the Conference of Ministers of Education and Ministers responsible for Economic Planning of Member States in Asia, held in Bangkok in November 1965, following up the Karachi Plan and the subsequent Tokyo Meeting. The working paper attempts to estimate, on a regional (Asian) basis, until 1980, the developing costs of education at all three levels, and the projections and indicators used can be applied to meet the particular problems of individual national plans.

Table I indicates the proportion of the national income being spent on education by countries in the region, the proportion of the national budget so spent, and the allocation of that expenditure between the three levels. In order to illustrate how *per capita* costs rise with levels, although total expenditures decrease, the allocation column is preceded by figures showing the percentage distribution of students between the three levels.

The range of expenditure of GNP on education is from 1.2 to 4.7 but with two exceptions is considerably below 3.5 per cent. The African plan formulated at Addis Ababa calls for an expenditure of between 3 and 4 per cent between

1961 and 1965, and of 4-6 per cent between 1970 and 1980. The proposals placed before the Asian Ministers in 1965 indicate that by 1980 an average expenditure of 3 per cent will need to rise to between 6 and 7.6 per cent (depending on the growth rate of national output) in the case of Malaysia, the Philippines and Thailand, and (it is to be feared a remote target) to between 5 and 6.5 for the remaining countries—the distinction is based upon the present level of primary enrolment.

It may be noted that educational expenditure in Cambodia is remarkably high, though the expenditure on primary education accounts for nearly 70 per cent of the allocation. The relative costs of third and second levels are well illustrated by the fact that though only one country of seven is shown as having more than 1 per cent of the total educational enrolment in third-level institutions, the proportion of total expenditure devoted to that level ranges between 5 and 17 per cent with an average of 11.5 per cent.[1]

An analysis of *per capita* costs is given in Table II; the figures should be read in conjunction with the percentage distribution of students between levels in Table I. Comment has already been made on the high *per capita* costs for Malaya and Singapore, and the low figure for Viet-Nam is referred to in footnote 9 of Table II. It is useful to group these figures for the whole region in one table, but the situation read horizontally for each country is much more significant than any attempt to draw comparisons by vertical examination;[2] the complete set of figures does, however, reinforce observation of certain tendencies such as the high cost in most countries of technical education at the second level—Thailand is an exception—and the comparatively low level (save in metropolitan Singapore) of the costs of primary education (and hence of the level of primary teachers' salaries).

A further useful, if, to the comparatively innumerate, somewhat formidable, econometric study of the costs of higher education in developing countries is to be found in the report of the Tananarive Conference[3] which yields a number of indicators which, though drawn from African sources, are not without

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[1] Similar distribution percentages (1957: no later data have been found) of standard recurring costs for five countries outside the region were:

Country	*Level*		
	First	*Second*	*Third*
	%	%	%
Japan	42	45	13
United Kingdom	50	40	10
Federal Republic of Germany	52	38	10
France	53	39	8
U.S.S.R. (1960)	39	43	18
Israel	79	11	10
Norway	63	30	7

Source: Japan. Ministry of Education. *Japan's Growth and Education*, p. 117 (Tokyo, 1963).

[2] 'Valid comparisons of national expenditure on education are even more treacherous than comparisons of student numbers.'—*Higher Education*, op. cit., Appendix Five, p. 16.

[3] *The Development of Higher Education in Africa*, op. cit., p. 157-212.

significance when the same type of problems are faced in South-East Asia. Table III[1] summarizes the findings of the study on capital investment and recurrent expenditure in Africa, based upon data supplied by eighteen institutions in 1962. Equipment is calculated as a percentage of the capital cost of buildings, and the columns give a totalled cost of investment in five major faculties. Recurrent expenditure is shown in the bottom line: it is suggested that a simple formula for calculating recurrent expenditure is to estimate total personal emoluments, and multiply the result by 100/60, since staff salaries appear on an average to consume 60 per cent of recurrent annual expenditure.

Some indicators of space requirements were calculated (as shown in Table IV) for this section of the Tananarive report (a paper prepared by Professor Jan Tinbergen and his colleagues) by the International Bureau for Planning and Design of Buildings for Education and Research, Delft.[2] These are net spatial requirements—the net space has to be doubled to provide for circulation space, walls, staircases, etc. The net space requirements for service buildings have been calculated as:

Service	*Unit*	*Net space (square metres)*
Library	1,000 books	1,000-1,200
Administration	1,000 students	250
Dining hall	Each student	1.8-2.5
Assembly hall	Each student	1.0-1.5
Hostel	Each student	18

These figures will need to be multiplied by 1.6 to give the gross space requirement.

African construction and installation costs in 1962 could be estimated at $70-$90 per square metre for arts; from $120 to $160 for science, technology and agriculture, from $150 to $220 for medicine, and between $70 and $80 for student housing. These costs include all services such as electricity, gas, water and telephone lines and services equipment, electrical and mechanical, together with fitted furniture and fixed seating, laboratory benches, etc.

Projections on the working paper for the conference of Asian Ministers of Education are based upon the following indicators:

	Cost per square metre ($)	*Area per pupil (sq.m.)*	*Capital cost per place ($)*	*Furniture and equipment ($)*	*Total ($)*
Science and technology	60	16	960	640	1 600
Arts and others	60	6	360	120	480
Hostels	50	13	650	215	865

It is not easy to reconcile these figures with those based upon existing African institutions, though experience suggests that building for prestige has in the past played a larger role in the planning and construction of universities in Africa than in Asia.

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[1] ibid., p. 180.
[2] ibid., p. 183.

Table IV. Approximate net space requirements in square metres per student

Subject of study	300 students		600 students		1,500 students	
	240 under-graduates	60 graduates	480 under-graduates	120 graduates	1,200 under-graduates	300 graduates
Arts[1]	12		9		6	
Medicine						
Preclinical	24		20		16	
Medicine	70		50		38	
Veterinary	40		30		24	
Dentistry	20		15		12	
Science						
Chemistry	24	48	20	40	16	36
Physics						
Pharmacology						
Biology	22	38	16	36	12	32
Geology						
Agriculture						
Agriculture	26	50	20	40	16	36
Dairy and animal sciences						
Forestry						
Agricultural economics	16	36	13	30	12	28
Agronomy						
Technology						
Mechanical engineering	28	48	20	44	15	40
Electrical engineering						
Physics	24	48	18	38	14	34
Chemical engineering						
Metallurgical engineering						
Architecture	16	30	14	25	12	22
Civil, mining engineering						
Clinics	For each 100 first-enrolled students 1,000 beds, 55-65 square metres per bed.					

[1] Including social sciences, geography, mathematics and education.

The basic building costs seem to be much higher in Africa—at least double for scientific and technological buildings, but the African capital figures include all services, service equipment and built-in furniture, land acquisition and site development. These charges do not appear to have been covered by the Asian calculations, and whilst there is a fair correspondence between the estimate for space per student required, this is considerably enlarged in the case of Africa by a 60 to 100 per cent increase in the basic indicator to provide for circulation, walls, staircases, etc.

Any *per capita* estimate of recurrent expenditure must of course depend principally upon the scale of staff salaries and the student/staff ratio. A comparison of the figures of recurrent expenditure per faculty at the foot of Table III and the actual figures for the University of Malaya given in Dr. Lim's notes (Table VI below) suggests that there is a fairly close relationship between African figures and those for Malaysia and Singapore.

The figures that have been quoted in this appendix have either been composite figures for the entire third level of a country, or averaged figures compiled on data sometimes rather dubiously defined. It has therefore seemed appropriate to conclude these notes with a commentary on the actual costs, capital and recurrent, involved in the building and operation of a new university in the region, the University of Malaya. The figures may serve as an encouragement or a deterrent—but within the economy of Malaya they have at least the merit of reality, and it may perhaps be not inappropriate for a guest of the university, which has housed this study since its inception, to express the view that no country in the region could seek a more functional yet strikingly sympathetic development of a new university campus, or a more encouraging start to the foundation of a truly national university.

III.2 A brief note on the finances of the University of Malaya

LIM CHONG YAH
Department of Economics, University of Malaya

The original University of Malaya in Singapore was founded in 1949 by the amalgamation of Raffles College and the Edward VII College of Medicine. In the academic year 1957/58 courses were also offered at Kuala Lumpur, and these led to the formal establishment of a separate Kuala Lumpur Division of the University of Malaya in 1959, at which time separate financial records were initiated for the two divisions of the university. Finally, by the University of Malaya Act, 1961, the Kuala Lumpur Division became the National University of the former Federation of Malaya, the other division becoming the University

TABLE V. Growth of the University of Malaya: students, staff, recurrent expenditure, student/staff ratio and cost per student, 1959-65

Year	Student enrolment[1]	Staff[1]	Recurrent expenditure (M.$)	Student/staff ratio (Staff = 1)	Cost per student (M.$)
1959	323	...	1.63	...	5 039
1960	654	71	3.34	9.2	5 105
1961	1 010	91	4.32	11.1	4 273
1962	1 341	109	5.46	12.3	4 071
1963	1 736	151	7.34	11.5	4 229
1964	2 225	190	9.56	11.7	4 297
1965	2 835	231	13.75[2]	12.3	4 850[3]

1. All student and staff figures refer to the end of the calendar year except 1960 staff (end of August), 1965 staff (end of September), and 1965 student (middle of July).
2. From estimates for 1965.
3. Based on estimates for 1965.

of Singapore. The two separate and distinct autonomous bodies then began the publication of individual annual reports, and the following notes, relating only to the University of Malaya, have been based upon data either to be found in these reports or most kindly supplied by the bursar.

The University of Malaya presents the Central Government with two sets of estimates, one relating to 'Recurrent income and expenditure' and the other to 'Capital development'.

RECURRENT INCOME AND EXPENDITURE

Total recurrent expenditure

The total recurrent expenditure of the new university has increased in spectacular fashion; in 1959, it was about $1.6 million,[1] in 1962 about $5.5 million and the estimated expenditure for 1965 is approximately $13.8 million. This increase has, of course, been the result of an equally spectacular expansion in student numbers, which rose from 323 in 1959 to 2,835 in 1965. Indeed over the period 1959-65, the average rate of student increase has exceeded the corresponding rate of growth of expenditure, resulting in a fall in average cost per student and a rise in student/staff ratio. Statistics on the growth of the university's student and staff[2] population, the increase in recurrent expenditure and changes in student/staff ratio and average cost per student since 1959 are given in Table V.

Average cost per student

The figures of actual average cost per student between 1959 and 1964 show two successive trends: (a) a steady and considerable fall in average cost from $5,039 per student in 1959 to $4,071 in 1962; and (b) a subsequent small but perceptible rising trend to $4,297 in 1964. The earlier declining tendency was due to a steady rise in the student/staff ratio, from 9.2 students per staff member in 1960 to 12.3 in 1962. The later rise in average cost in 1963 and 1964 can be attributed to: (a) a fall in the over-all student/staff ratio; and (b) an average increase of about 10 per cent on teaching staff salaries from the beginning of 1964.

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[1] All costs are expressed in Malaysian dollars: M.$3.3 = U.S.$1.

[2] In this note, 'staff' refers to teaching staff only unless otherwise stated.

Student/staff ratio

As the student/staff ratio is an important determinant of average cost per student, it is desirable to examine the figures in some detail. However, in a rapidly expanding university it is important that such statistics be handled with special care, for the establishment of new faculties may affect the over-all ratio while concealing trends in the older faculties. Such is the case with the University of Malaya. The over-all student/staff ratio increased steadily every year between 1959 and 1962 to 12.3 : 1; in 1963 it showed a decline to 11.5 : 1. This was due to the establishment of the new faculties of Education and Medicine in 1963. If the student/staff ratios of the two new faculties were excluded from the computation, the remaining over-all ratio would have shown a rising trend, without interruption, since 1959.

Inter-faculty comparison

In 1964, the latest year in which statistics on the average cost per student are available, it is interesting to note that it cost about twice as much per year to educate a medical student ($15,902) as an agricultural student ($7,219), and only about half as much to educate an engineering student per year ($3,761) as an agricultural student. Perhaps comparison with the Medical Faculty is scarcely appropriate at this stage of the university's development, as the faculty is a relatively new one, but since both Agriculture and Engineering are old by comparison with established faculties the wide disparity in average cost is surprising: it may be attributed mainly to the fact that the Agriculture Faculty has a much lower student/staff ratio (8.8) than the corresponding Engineering Faculty (13.8).

Statistics on student/staff ratio and the average cost per student of each faculty since 1960 are given in Table VI. Annex A contains statistics on the growth of the staff and student population of each faculty from 1959 to 1965.

It may also be noted in Table VI that the average cost per student is high or low in inverse proportion to the student/staff ratio. The Medical and Agriculture Faculties have the highest average student costs, and the lowest student/staff ratios; the Arts and the Engineering Faculties have the lowest average student costs, and the highest student/staff ratios.

Examining the available figures (1960-65) on student/staff ratios it is interesting to note that all the faculties show a steadily rising student/staff ratio except the Faculty of Engineering, in which there has been a declining tendency since 1961. As is to be expected, the trend in all faculties is a declining cost per student, except in Engineering where there has been a steady increase. Nevertheless,

TABLE VI. University of Malaya: Student/staff ratio and average cost per student by faculty, 1960-65

Year	Faculty												Whole University	
	Arts		Science		Engineering		Agriculture		Education		Medicine			
	ACPS ($)	S/S ratio	ACPS ($)	S/S ratio	ACPS ($)	S/S ratio	ACPS ($)	S/S ratio	ACPS ($)	S/S ratio	ACPS ($)	S/S ratio	ACPS ($)	S/S ratio
1960	...	12.6	...	4.4	...	13.3	...	5.4	—	—	—	—	5 105	9.2
1961	3 289	13.6	6 667	6.5	3 373	18.0	10 675	6.6	—	—	—	—	4 273	11.1
1962	3 225	16.1	5 667	8.0	3 355	17.4	8 368	6.7	—	—	—	—	4 071	12.3
1963	3 168	16.2	5 582	8.8	3 509	14.3	7 672	7.6	5 606	5.7	...	3.1	4 229	11.5
1964	3 027	17.7	5 467	9.2	3 761	13.8	7 219	8.8	4 584	8.8	15 902	3.4	4 297	11.7
1965	...	19.4	...	10.7	...	13.4	...	8.6	...	12.5	...	3.7	...	12.3

Notes

ACPS = average cost per student ($).

S/S ratio = student/staff ratio; staff = 1.

... = not readily available, not available or not yet available.

— = nil or not applicable.

even in 1964 the Engineering Faculty could still claim to have a per student average cost which, except for the Arts Faculty, was the lowest in the university.

The comparatively high student/staff ratio of the Arts Faculty and its tendency to rise rapidly must be a matter of considerable concern.

Structure of recurrent expenditure

The university's Income and Expenditure Account divides recurrent expenditure into three parts: staff emoluments; departmental expenditure; and other charges. Of the three heads, as is to be expected, the most significant is staff emoluments, which covers the remuneration of teaching and general staff. In 1963 of a total actual expenditure of about $7.3 million, approximately $4.4 million represented staff emoluments (see Annex B).

'Departmental expenditure' is again subdivided into three parts: administrative; teaching departments; and special expenditure for equipment. 'Administrative' expenditure refers to the expenditure of the Central Administration, that is, the Vice-Chancellor's Office, the Registrar's Office, the Bursar's Office, the Estates Office, the Deans' Offices, the Library and the Student Health Service. Of the $0.55 million or so spent in 1963 under this heading, about $0.45 million was spent on the library.

The subheading 'teaching departments' refers to the special expenditure of each department, such as that on stationery and teaching materials: it also includes research grants by the university. In 1963 expenditure under this subhead came to about $0.5 million, shared by the twenty-three departments of the university then in existence.

The great spenders of 'special expenditure for equipment' were Chemistry, Geology, Physics and Zoology, which in 1963 together accounted for about $0.43 million out of a total approximate expenditure of $0.56 million for the whole university.

The last main head, 'other charges', which amounted to $1.34 million in 1963, is made up of a long list of miscellaneous expenditure for which the administration is responsible. The most important item ($0.40 million) on the list is 'Passages for new appointments, staff on furlough, study leave and hotel expenses', reflecting not only the considerable reliance of the university on overseas staff but also the fairly generous terms which the university offers to both overseas and local staff for home and study leave. The next item in order of size is 'electricity charges', which came to $0.24 million in 1963, an amount largely due to expenditure on the air-conditioning service of the university. The third outstanding item is 'Medical charges' ($0.14 million): the university provides free medical attention for all its teaching and non-teaching staff and their immediate dependants.

Sources of recurrent income

By far the most important source of income is the Central Government. In 1963 of the total actual university annual income of about $8.28 million no less than $7.13 million was met from this source. 'Tuition and other fees' paid by students amounted to about $0.82 million or an average of about $474 per student in the same year. Since a large percentage of the students also receive direct financial aid (scholarships and bursaries) from the Central or State Governments an important part of this $0.82 million may also be considered as an indirect government contribution to the maintenance of the university. The third significant source of revenue has been 'Rents on staff quarters' ($0.14 million in 1963). This, however, has to be offset against both capital and recurrent costs, since the university builds houses which it assigns to staff members at a rental varying from $100 to $125 per month, which is about one-third to one-quarter of the prevailing market rents.

General statements of the income and expenditure of the university for 1962, 1963 and revised estimates for 1964 are given in Annex B.

According to one estimate the university is likely to have a student population of 7,000 by 1970, compared with the 1965 figure of 2,835. The same source estimates that the recurrent cost by then would be in the region of $35 million per year, based on an average of $5,000 per student per annum. It appears that the bulk of this sum of $35 million will, as in the past, have to be met by the Central Government.

EXPENDITURE ON CAPITAL DEVELOPMENT

The University of Malaya is in a rapid state of expansion not solely in terms of student intake, staff recruitment and recurrent expenditure, but also in terms of increasing capital assets. Ever since the first bulldozer started to level the old rubber holdings of the Pantai Valley to accommodate a university campus, building activities have been incessant. At the time of writing (October 1965) work is in progress to complete the final phase of the building programme for the Faculty of Medicine and its Medical Centre, and the Great Hall and Administrative Centre.

Phase I, 1956-60

Between 1956 and 1960, Phase I of the university's construction programme, costing approximately $15.2 million, made possible not only the establishment of the faculties of Arts, Science, Engineering and Agriculture, but also the construction of the University Library, two residential colleges for students, a number of houses for staff members, a Students' Union House and the development of roads within the university. The $15.2 million also included the cost of acquisition of 738 acres of land, only a small part of which has thus far been utilized by the university. Details of various projects and their costs can be found in Table VII.

The land was compulsorily acquired by the Government from a large number of private owners, many of whom resorted to the law courts for increased compensation, nearly all with some success. The rest of the land was sold to the university by the Selangor State Government and the Petaling Jaya (urban) Authority. The distribution between these three sources was as follows: State land, 224.312 acres; alienated land acquired from Petaling Jaya, 63.700 acres; alienated land acquired from private owners, 450.043 acres; total 738.055 acres.

All in all the Central Government, on behalf of the university, paid $1,437,500

TABLE VII. University of Malaya: capital development programme (Malaysian dollars)

Institutions	Phase I 1957-60 (actual expenditure)	Phase II 1961-65 (revised estimates)	Phase III 1966-70 (planned expenditure)
Faculty of Arts	1 022 307	948 000	1 800 000
Faculty of Science	2 215 455	2 358 400	6 664 000
Faculty of Engineering	1 542 000	1 000 000	1 000 000
Faculty of Agriculture	1 905 425	—	2 620 000
Faculty of Education	—	775 000	1 710 000
Faculty of Medicine	—	12 277 800	—
Library	402 352	1 900 000	1 250 000
Administration, Great Hall, and Theatre, etc.	—	2 750 000	—
Residential colleges	2 211 268	6 345 474	8 000 000
Staff housing	3 151 851	5 930 000	4 600 000
Students' Union House	188 344	—	200 000
Roads, external services and land	2 522 127	500 000	1 250 000
University Centre	—	—	10
Computing equipment	—	—	1 000 000
School of Dentistry	—	—	1 000 000
School of Architecture	—	—	1 100 000
TOTAL	15 161 129	34 784 674	32 194 010

for the 738 acres, roughly $1,948 per acre or slightly less than 0.05 cents per square foot.

At the time of writing (October 1965) comparable undeveloped rubber land in the vicinity of the university is known to have been sold for from $1 to $1.60 per square foot.[1] If present land values were conservatively estimated at $1 per square foot, the total land value of the university campus would be about $32.2 million, compared with the $1.4 million actually paid. This spectacular rise in land values in the region must be partly attributed to the establishment and development of the university itself—partly to the developing values promoted by the growth of the adjoining industrial satellite of Petaling Jaya.[2]

Phase II, 1961-65

The revised estimates show that the second phase (1961-65) in the university's development programme should cost about $34.8 million, slightly more than twice the amount spent on the first phase (1956-60). Two more new faculties have been established during Phase II, the Faculty of Medicine and the Faculty of Education; the construction cost of the former is expected to reach $12.3 million

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1. The undeveloped land recently acquired by the University Staff Housing Co-operative Society, for instance, came to about $1.25 per square foot.
2. Nature, assisted by admirable planning, has enabled the university and the complex of light industries to occupy opposed and mutually invisible slopes of a ridge.

while the latter is estimated at the very much lower figure of $0.78 million. The Administrative Building, Great Hall and Theatre, a complex in an advanced stage of construction, should amount to about $2.8 million. Two slightly larger new residential hostels for students and a further number of staff housing units have also been added, together with important extensions to buildings of the faculties of Arts, Science and the Library (see Table VII for more details).

Excluding the cost of land and books, the Library cost $2.3 million, $0.4 million being spent in the first phase and $1.9 million in the second phase, adding 65,000 square feet of usable floor space which, together with the 9,000 square feet in the first phase, provides a total of 74,000 square feet. The present stack and seating capacities of the Library are, respectively: stack—first phase 45,000 volumes, second phase 150,000, total capacity 195,000; seating—first phase 120 places, second phase 240, total capacity, 360.

In considering the seating capacity of the Library, it may be recalled that already in 1965 the university enrolment numbers 2,835 students, about 60 per cent of whom do not live in the four residential colleges.

Phase III, 1966-70

In the third phase (1966-70), as can be seen from Table VII, the planned expenditure is estimated at $32.2 million, an important part of which is intended for the extension of the buildings of existing faculties. One new faculty and two new schools are to be established during this phase—the Faculty of Economics and Administration (shown under 'Arts' in Table VII) and the Schools of Dentistry and Architecture. A $1.25 million extension of the Library is also provided for.

SOURCES OF CAPITAL GRANTS AND INCOME

As in the case of recurrent expenditure, the Central Government has provided the bulk of the costs of capital development. By the end of 1963, for instance, of the total sum of $30.9 million thus far received by the university to meet development expenditure, as much as $25.8 million came from the Central Government: much of the balance was contributed by the United Kingdom ($2.6 million) and New Zealand ($1.5 million).

Donations from private individuals and organizations to meet the mounting expenditure of the university are shown separately from the Capital and Recurrent Accounts. They do not constitute an important item in relation to either of the two accounts. There is little doubt that the university has not yet taxed other sources of finance to the full.

COLLEGE FINANCES

There are at present four residential colleges, housing a total of 1,139 students. The total cost of building the four colleges came to about $5.2 million, being made up as follows: first Residential College, $1,085,268; second, $1,096,974; third, $1,503,982; fourth, $1,502,185; total $5,188,409.

It appears that roughly $4,500 is needed to provide accommodation for each student. Thus, if by 1970 the estimated student intake of 7,000 were to be fully housed on the campus about $26.4 million would have to be made available for the third phase of the Development Programme. Actually only $8 million is allotted to increased student accommodation: this will provide for another 1,777 students. Accordingly some 3,916 students will be accommodated by 1970, which on present estimates of enrolment will amount to about 56 per cent of the student body, as compared with 40 per cent at present accommodated.

Each of the four colleges is more or less self-financing. The total running expenditure of the first college, for instance, amounted to $299,493 in 1964 and the actual income to $303,473, yielding a surplus of $4,034. Details of the finances of the four colleges are given in Annexes C and D.

The main item of expenditure in all the colleges is, as might be expected, food, which, for the first college, came in 1964 to $132,975 out of a total expenditure of $299,439. The rest of the expenditure consisted of a wide variety of items of which personal emoluments of college staff, laundry, building maintenance and cost of gas and electricity were the most important. Detailed statements are given in Annex C.

The running cost per student varies from college to college; ranging from $961 in the third college to $1,164 in the second in 1964. Each student has to pay a hostel fee of $330 per term or $990 per year. As can be seen from Annex D, the rest of the colleges' income comes from several sources of which vacation fees paid by students and non-students residing during vacations are the most significant. Thus, in so far as the university is subsidizing student expenditure in the residential colleges, it is confined to capital expenditure.

More students could be enrolled were capital costs to be reduced: indeed, by this means more faculties could be created, though this would most probably mean a general reduction in the standards of new buildings. There is also, it would seem, some room for the reduction of recurrent costs without the lowering of the present high academic standards which there is no doubt the university would wish to maintain.

ANNEX A. University of Malaya: student population and teaching staff by faculty, 1959-65

Faculty	1959		1960		1961		1962		1963		1964		1965	
	Student	Staff	Student	Staff	Student	Staff	Student	Staff	Student	Staff	Student	Staff	Student	Staff
Arts	163	...	354	28	556	41	723	45	908	56	1 188	67	1 496	77
Science	31	...	114	26	203	31	318	40	398	45	462	50	568	53
Engineering	129	...	159	12	198	11	226	13	257	18	262	19	281	21
Agriculture	—	—	27	5	53	8	74	11	99	13	123	14	154	18
Education	—	—	—	—	—	—	—	—	34	6	88	10	150	12
Medicine	—	—	—	—	—	—	—	—	40	13	102	30	186	50
University	323	...	654	71	1 010	91	1 341	109	1 736	151	2 225	190	2 835	231

Notes

— = nil.

. . . = not available.

All figures refer to the end of the year except 1960 staff (end of August), 1965 staff (end of September) and 1965 student (middle of July).

ANNEX B. University of Malaya: income and expenditure—1962, 1963, 1964 (in Malaysian dollars)

Income	Actual 1962	Actual 1963	Estimated 1964
Grants:			
Federation Government[1]	5 754 028	7 134 000	7 800 000
Sarawak Government	15 000	15 000	15 000
Brunei Government	—	10 000	5 000
Tuition and other fees	616 910	824 204	1 141 000
Rent on staff quarters	127 933	148 266	156 000
Income from investments	78 476	122 011	80 000
Professional and other fees	2 460	280	1 000
Sundry revenue	27 454	33 456	10 000
TOTAL INCOME	6 622 261	8 287 217	9 208 000
Deficit	—	—	1 652 167
	6 622 261	8 287 217	10 860 167

Expenditure	Actual 1962	Actual 1963	Estimated 1964
Staff emoluments	3 359 164	4 390 576	7 352 867
Departmental grants:			
Teaching departments	331 122	501 609	659 630
Administration, Library and Health Service	424 270	548 634	542 950
Block grant (E) special expenditure for equipment	440 675	557 348	650 000
Other charges	903 689	1 344 129	1 654 700
New departments	—	—	20
TOTAL	5 458 920	7 342 296	10 860 167
Surplus	1 163 341	944 921	—
	6 622 261	8 287 217	10 860 167

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1. Government of the Federation of Malaya.

ANNEX C. Structure of expenditure of residential colleges, 1964 (Malaysian dollars)

Expenditure	Actual expenditure, 1964			
	1st R.C. 260 students	2nd R.C. 260 students	3rd R.C. 329 students	4th R.C. 290 students
Personal emoluments				
Establishment:				
Permanent and temporary	**66 830**	**71 045**	**66 067**	**57 529**
Honoraria:				
Masters/Principal *and* Domestic Bursar	**3 000**	**3 000**	**3 150**	**2 000**
Food				
Students	130 701	135 471	138 641	145 528
Vacation and visitors			13 257	
High table	872		2 275	
Formal dinners	735			
Festivals	667		1 208	
	132 975	**135 471**	**155 381**	**145 528**
Student expenses				
Annual ball	1 857	—	—	590
Entertainment	180	—	—	668
Junior Common Room	1 230	1 500	1 448	2 114
Laundry	18 522	16 437	23 799	22 211
Staff and office expenses				
Medical charges	2 877	4 989	2 523	2 059
Office and travelling expenses	1 999	1 533	770	1 309
Uniforms	1 200	1 345	2 957	1 417
Maintenance				
Domestic requisites	4 313	3 859	4 054	4 467
Replacement of equipment	6 224	1 872	2 992	1 745
Maintenance of buildings	10 000	10 000	10 000	10 000
Electricity and gas	34 611	33 295	29 494	23 621
Telephone	4 352	3 406	3 119	2 409
Water	2 960	4 276	3 713	5 580
General				
Assessment rates	2 594	2 594	2 594	2 594
Fire insurance and workmen's compensation	648	648	906	816
Contingencies	1 121	309	—	1 669
Special equipment				
Special expenditure on equipment	1 946	6 997	3 351	7 564
	96 634	**93 060**	**91 720**	**90 833**
TOTAL EXPENDITURE	**299 439**	**302 576**	**316 318**	**295 890**
Transfer to Accrued Fund (income surplus)	4 034	—	11 605	36 165
	303 473	**302 576**	**327 923**	**332 055**
Cost per student	1 152	1 164	961	1 020

ANNEX D. Sources of income of residential colleges, 1964 (Malaysian dollars)

Source of income	Actual income, 1964			
	1st R.C. 260 students	2nd R.C. 260 students	3rd R.C. 329 students	4th R.C. 290 students
Students' hostel fees ($330 per term)	261 492	261 602	301 441	301 116
Students' contribution to Junior Common Room	—	—	—	—
Telephone (coin box)	2 027	1 643	2 283	1 451
Miscellaneous				
Vacation fees (students)	21 615	18 133	24 199	16 593
Vacation fees (visitors—board and lodging)	14 606	10 438		12 895
Sale of meals	3 733	1 022		
Music room	—	—		
Transfer from accrued funds (deficit)	—	9 738	—	—
TOTAL	303 473	302 576	327 923	332 055

IV. Afterword: A note on the nature and functions of the university

F. Cyril James
Principal emeritus of McGill University, Montreal, Canada

More than two thousand years ago, rulers in India and other parts of Asia, Asoka perhaps the most famous among them, established Buddhist monasteries and encouraged the monks both to study and to teach young men who came to them. Many centuries later, when the dynamic culture of Islam was spreading across the world, the University of Al Azhar was founded in A.D. 970 and Nizimaiyah (where Omar Khayyám taught) around A.D. 1066. Further to the west, the University of Cordoba was flourishing in the middle of the eleventh century.

There is no evidence that the founders of these renowned Islamic universities knew of the earlier Buddhist foundations, but the economic wealth and cultural riches of the Saracens certainly exercised a profound effect on European thought during the two centuries that followed the First Crusade. The conflict between Christianity and Islam did not blind European thinkers to the fact that Moslem society was, in many respects, more highly developed than their own.

It was during those two centuries—the twelfth and the thirteenth—that universities first took shape in Europe and, from the very beginning, they began to develop along lines substantially different from their Islamic and Buddhist predecessors. During the seven centuries that followed, university institutions on the European model have been created in every corner of the world, and the increase in their number during our own generation greatly exceeds that in any earlier period of history. It has indeed been estimated that one-third of all the universities in the world today have come into existence since the end of the Second World War, in 1945, while in seven countries of South-East Asia the figures given in Table VIII below reveal that less than one-quarter of the institutions of higher education that are now in operation can look back on twenty years of experience.

It must be realized, however, that during the past seven centuries universities in all parts of the world have changed considerably in their essential structure as well as in their relationships to the community that they serve. Ancient universities like Oxford and Paris take pride in buildings that are centuries old, and some of their academic ceremonies are as ancient, but the pattern of their operations is radically different from what it was as recently as 1900. Newer universities like California and Moscow show even less similarity to the ancient pattern. Each generation—in each country of the world—must ask, and answer clearly in terms of its own problems and its concept of social development: What is the function of the university?[1]

At this moment in history, in terms of the policies and aspirations of every country in the world, the simplest description of a university would be to say that it is an institution that, at the highest possible level, contributes to the development of human resources within the community. 'Human resource development is the process of increasing the knowledge, the skills, and the capacities of all the people in a society. In economic terms, it could be described as the accumulation of human capital and its effective investment in the development of an economy. In political terms, human resource development prepares people for adult participation in political processes, particularly as citizens in a democracy. From the social and cultural points of view, the development of human resources helps people to lead fuller and richer lives, less bound by tradition.'[2]

Defined in those broad terms—economic, political and cultural—the development of human resources ranks among the primary aims of all countries, from the most primitive to the most highly developed, and there can be no doubt in our minds that the rapid expansion in both the number and the size of universities in our generation has been due to the urgent need of every community for larger numbers of what, in current parlance, is described as 'high-level manpower'.

In all countries, and in all ages, there have been some men and women who studied solely for the love of learning—desiring neither to teach nor to use their knowledge in the service of the community. These individuals constitute a small minority. Nearly twenty-five centuries ago, Confucius points out, in the Analects, that it was not easy to find a man who had studied for three years without aiming at pay, and the Robbins Report underlines the fact that men and women study at universities in order to qualify themselves as doctors, engineers, teachers —or for any other careers and professions in which they can both serve the needs of the community and improve their individual status.[3] This is equally true of the United States and the U.S.S.R.: political ideology makes no difference in this regard.

The university is, therefore, an institution designed to educate the high-level manpower needed by the community, but university graduates are not a homogeneous mass in which all the units are interchangeable. An arts graduate or a lawyer cannot do the work of an engineer—although any one of the three may develop into a successful administrator of a government department or a business enterprise. An agricultural scientist cannot do the work of a physician, nor can

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1. An interesting discussion of this changing concept of the university is presented in the first chapter of Clark Kerr, *The Uses of the University* (Cambridge, Harvard University Press, 1963).
2. F. Harbison and C. A. Myers, *Education, Manpower and Economic Growth*, p. 2 (New York, McGraw Hill, 1964).
3. *Report of the Committee on Higher Education*, p. 6-7 (London, HMSO, 1964. Cmnd. 2154).

a chemist take on the job of a dentist. Each community, at each stage of its development, has particular needs for special types of skills, as Professor Harbison and Professor Myers point out in *Education, Manpower and Economic Growth*, while Mr. Guy Hunter's report[1] suggests specific manpower targets for seven[2] countries of South-East Asia.

These specific manpower targets for South-East Asia do not concern us here: they are discussed in detail on other pages of this report. What does concern us is the clear recognition of the role of the university. As a first point, we must realize that it is *not* the function of the university to decide what particular types of manpower the community needs most urgently. As a second point, we must be equally clear that a full-time university education is not the only way in which the country's needs for particular types of high-level manpower can be appropriately and speedily met.

The responsibility for deciding upon the precise number of highly-trained individuals needed by the community in each category—scientists, engineers, physicians, school-teachers, etc.—is shared by all those individuals (in government or in business) who are responsible for planning and development. In the U.S.S.R. and other socialist countries, as a rule, the central government formulates a detailed plan of predictable manpower needs, and the admission of students to each faculty of the university (and to all other institutions of higher education) is controlled by that plan. Similar plans are, to an increasing extent, being formulated in many non-socialist countries (especially in those that are in the earlier stages of development) but there is still a strong tradition in the U.S.A. and most countries of Western Europe that the free play of economic forces in the employment market will adjust the supply of special skills to the demand for them. It is assumed that an increase of salaries and other emoluments for those types of highly skilled manpower that are in short supply will encourage larger numbers of students to qualify themselves for careers in those fields.

It is, in fact, unlikely that manpower planning—no matter how efficiently it is carried out—will ensure the education of the appropriate numbers of individuals with particular skills unless it is reinforced by the resort to financial incentives. The fact that the U.S.S.R. has, during the past two decades, offered high financial rewards to its scientists and engineers (as well as to university professors and academicians) reinforces the lesson to be learned from the history of the United States and other western countries. Incentives are just as necessary to an effective manpower policy as are universities and national development plans: the community must, at all times, be sure that it offers to the particular kind of educated manpower that it needs most urgently salaries and other inducements high enough to encourage a sufficient number of young men and women to qualify themselves to do this work.

There is, however, a third element in effective manpower policy which is emphasized by Harbison and Myers—the process of upgrading and retraining individuals who are already employed, either by specific on-the-job training programmes organized by industry and government or by more general adult education programmes in which the university can play a significant role. In a world where development is rapid, and technology advances by giant strides, any scientist, engineer or other professional specialist must—unless he is continuously studying—expect to need periods of re-education or advanced training at least once in each decade. A generation or two ago, a man who had completed satisfactorily an educational programme that enabled him to qualify for a profession might expect to continue his career and grow old in a world that was intellectually familiar to him. 'We are living in the first era for which this assumption is false, and we have not yet faced the consequences of this fact.'[1]

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[1] Guy Hunter, *High-Level Manpower for Development*, published as Volume III, Part I of this report.

[2] Now eight, since the separation of Singapore from the Federation of Malaysia (Editor's note).

We can now see the nature of the university in proper focus. Governments, in every country of the world, are interested in the creation and expansion of universities because of a growing consciousness of their countries' needs for increasing numbers of highly educated men and women—for high-level manpower. Universities, as the pinnacle of an educational system that includes good primary and secondary schools, can provide the kind of education that will produce such high-level manpower: that is their primary purpose. But universities cannot, of themselves, decide what particular types of highly educated manpower the community needs: that must be done by those in the community —whether in government or in industry—who carry the responsibility for manpower planning, and it is essential that they should pay attention to the level of incentives offered to attract individuals to particular careers. Finally, the university is not, especially in the short run, the only institution that can train high-level manpower. Upgrading and retraining are, over wide areas, alternative procedures open to the community and, in a very significant degree, the university must have a voice in deciding what types of educational programme it can effectively offer as its contribution to the over-all manpower policy.

This last point demands emphasis. Every university 'needs contact with the public life, with historical reality, with the present, which is essentially a whole to be dealt with in its totality. . . . The university must be open to the whole reality of its time. It must be in the midst of real life and saturated with it.'[2] For this reason, universities may differ in detailed pattern from one country to another, and those patterns may change considerably over periods of time. But, in spite of all these changes and diversities, it remains fundamental to the concept of a university that it should possess that degree of autonomy which will enable it to decide what it can do well and how best to do it.[3] A university, although it can contribute mightily to the development of a country, is not a government department. It has a life of its own and, if that independent life is not protected and allowed to develop, the university will die.

Having placed the university in focus, in terms of contemporary policies of

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1. Sir Eric Ashby quoted in 'Investment in man must be wider', *The Times*, London, 29 August 1964.
2. Jose Ortega y Gasset, *Mission of the University* (London, Routledge and Kegan Paul, 1963).
3. Autonomy is essential to the life of a university, but the subject is not further elaborated in this note because the International Association of Universities has published, in 1965, a working paper by the late Sir Hector Hetherington and others which attempts to define the essential ingredients of university autonomy. The whole matter will be further discussed at the International Congress of Universities, in Tokyo, in September 1965.

development—economic, cultural and political—it may be useful to turn backward to history in order to define more precisely the basic functions of a university and to understand some of the reasons for the diversity of types of university that now exist.

When universities came into existence in Europe more than seven centuries ago the countries of that region were, by modern standards, economically underdeveloped. Most of the population was employed in agriculture: only a small minority was literate. Industry and trade employed perhaps 10 per cent of the total population (in many countries the proportion would have been smaller). These craftsmen and merchants were the privileged citizens of the towns, enjoying a higher political status and a larger measure of personal liberty than the great body of the rural population. Training for industrial and mercantile activity was in the hands of the craft guilds, and a young man served his apprenticeship under a master craftsman until he was fully qualified. Techniques of production —both in agriculture and in industry—changed slowly and innovation was not encouraged.

The earliest European universities,[1] at Bologna, Paris and Salerno were, like the craft guilds of those cities, private corporations of teachers and students formed for the express purpose of educating men (there were no women students at that period) who wished to become lawyers, physicians, teachers or priests. At their inception, therefore, universities were teaching institutions whose activities were directed towards the training of high-level manpower, and the subsequent careers of many of their graduates comprise important chapters in the history of every country of western Europe.

Detailed discussion of the development of the older European universities would be inappropriate, but some aspects of their operations are still relevant for us. In the first place, these universities were international institutions that drew their teachers and students from all countries. Although it was realized that the university was a local asset, so that city administrators and national governments endeavoured to retain and develop the university within their territory, the universities themselves did not direct their activities to purely local aims. Each of them produced graduates to serve all the countries of western Europe and, recognizing that no university could be outstanding in every field, there was a well-recognized attempt at specialization. The young man who hoped to become an outstanding lawyer went to study at Bologna because its teachers were the most famous in that field. Paris was pre-eminent in theology, and Salerno in medicine.

Secondly, it must be pointed out that all these universities taught in Latin, the international language of scholarship at that period. Although the various national languages, as we know them today, were gradually taking shape—and were in fact the vehicle of communication in matters of trade and commerce as well as in political discussions—all scholarly writing was in Latin and the whole body of knowledge was available only to the student who had made himself master of that language.

The third point to emphasize is that every student of every university was required to familiarize himself with the common cultural heritage of Europe before commencing the specialized studies that would enable him to qualify for a professional career. The details of the *trivium* and *quadrivium* by which a man earned his *baccalauréat* are not important to us: the culture of the modern world is vastly different from that of the thirteenth century. What is important is that these earliest European universities insisted that all of those who came to study within their walls should become deeply familiar with the culture of the period in which they lived. 'Culture is what saves human life from being a mere disaster: it is what enables a man to live a life which is something above meaningless tragedy or inward disgrace. We cannot live on the human level without ideas . . . and man lives, perforce, at the level of the ideas of his time.'[1]

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[1] The simplest, and shortest, account of their emergence is to be found in C. H. Haskins, *The Rise of Universities* (Ithaca, New York, Cornell University Press, 1957). The standard work is H. Rashdall, *The Universities of Europe in the Middle Ages* (Oxford, Clarendon Press, 1895, revised edition, 1936).

Teaching, then, in the manner that has been sketched in the preceding paragraphs, was the first and most abiding function of the university from the very moment at which it came into existence.

At a comparatively early stage, a second function was assumed—that of conserving the existing body of knowledge and reinterpreting it to each succeeding generation of students. Books and manuscripts were scarce and expensive in those days: the collections in the university libraries were likely to be richer than any to be found elsewhere. As those libraries grew, and as the community of scholars developed not only in number but in intellectual brilliance, the university became in large measure the interpreter of the national culture and, to some extent, the conscience of Western Europe. The merchants of Antwerp sent a delegation to ask the theologians of the University of Paris whether it was sinful to make a profit from speculation. The Pope himself sought the advice of the Canon Lawyers at Bologna. Examples could be multiplied. The university, with its professors and doctors, had become the final authority in the community on many matters of academic, legal and spiritual tradition. Its voice was independent of political government, and its opinions were founded upon knowledge.

The third function of the university—research and the discovery of new knowledge—came to be recognized at a much later period. There have, of course, always been found in universities brilliant and devoted scholars whose inquiries have widened the horizons of man's knowledge and the depth of his understanding but, prior to the nineteenth century, many scientific discoveries and almost all of the technological innovations that contributed so much to the early stages of the industrial revolution (especially in England) were the work of men who had little or no formal contact with universities. It was the German universities, particularly after that country became a unified nation-State in 1870, which began to place heavy emphasis upon research in many fields of pure and applied science, as a significant factor in the economic development of the country—and the inquiring spirit of research spread rapidly to all the other disciplines within the university. That spirit spread, too, to universities in other countries all over the world—so that concepts of history and theology have been revolutionized as completely during the past century as those of chemistry and physics. Mankind has been moving consciously into a more dynamic phase of development, and universities assumed the role of pioneers.

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[1] Jose Ortega y Gasset, op. cit., p. 44.

These three functions—teaching, the conservation and re-interpretation of accumulated knowledge as well as continuous research, to widen the frontiers of man's mind—are today recognized as fundamental to the university. There is no argument on that point. Every university in every country of the world admits its responsibility for the discharge of all three functions, in spite of differences in age, of academic structure and of the political philosophy of the country in which it operates.

It must be clearly recognized, however, that there are wide differences in the way in which universities perform these three functions, in the extent to which they are involved in meeting the needs of the community that they serve.[1] In all of the countries of western Europe, the ancient craft guilds had prestige as great as that of the ancient universities. The goldsmith or the mercer who had served his apprenticeship and become a master craftsman was not considered in any way inferior to the lawyer or the physician who had studied at the university and, when the accelerating rate of technological progress outran the traditional pattern of apprenticeship, technical schools and institutes were established to provide specialized education.

Although a few institutions of this kind had been established earlier in the eighteenth century, the movement received dramatic impetus in France when all of the universities were suppressed by the Revolution, even the ancient University of Paris in 1793.[2] To provide the opportunity for higher education, the revolutionary government created a number of special schools, known today as *Les grandes écoles*, which provided the only avenue of qualification for the most senior posts in government and public service. L'École Normale Supérieure was founded in 1794, as was L'École Polytechnique; L'École Centrale des Arts et Manufactures came into existence in 1829, L'École Nationale des Eaux et Forêts in 1824.

These are but a few of the famous specialized institutions of higher education in France, all of which hold prestige equal to—often greater than—that of the French universities because their limited enrolment causes keen competition among the ablest young men and women to gain entry to them. L'École Normale Supérieure, for instance, had in 1963/64 a total enrolment of 348 students, selected by rigorous competitive examination, so that the *normaliens* who graduate from it are more often destined to become university teachers or to hold senior posts in the public service than to spend their lives as school-teachers.

During the past fifty years in France, the expansion of higher education in the fields of the applied sciences, technology, pedagogy and many of the social sciences has been accomplished outside the universities, and the number of specialized institutions devoted to a single branch of knowledge has increased substantially. The universities have, therefore, since their reconstitution in 1896, confined their activity very largely to the traditional faculties of medicine, law, science and letters.

A somewhat similar division of labour developed in Germany during the nine-

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1. This diversity is discussed at length in Chapter V (and in greater detail in Appendix V) of the *Report of the Committee on Higher Education* cited above.
2. Although university teaching later developed once more in certain faculties, it was not until 1896 that the French universities were formally reconstituted in traditional form as autonomous institutions.

teenth century as a result of the creation of *Technische Hochschulen* (some of which have subsequently been raised to the status of technical universities), and the U.S.S.R., in its tremendous programme for the expansion of higher education during the past quarter of a century, has followed the pattern of France and Germany. Even in Great Britain, although the development of specialized institutions has not yet proceeded nearly as far as in the other countries mentioned, 20 per cent of the newly qualified scientists and 70 per cent of the newly qualified engineers come up through non-university channels.[1]

This European tradition of specialized facilities for professional education in many fields explains the fact that the universities of Europe have been in a position to concern themselves primarily with education in the various fields of the humanities, pure science and the liberal professions. Traditionally, the universities have opened their doors to no more than a small proportion of the youthful population, attempting to select candidates of outstanding ability and to provide for them in these particular fields an educational programme that will exercise that ability to the fullest extent. In Great Britain, for example, only 5.6 per cent of the youthful population[2] received a university degree during the 1961/62 academic session: in some countries of western Europe the proportion was as low as 2 per cent and even in the U.S.S.R. it reached no more than 7 per cent.[3]

In the United States, by contrast, it is estimated that more than 30 per cent of the youthful population gained admittance to university and more than 17 per cent won university degrees—a proportion three times higher than that for the United Kingdom. The lack of alternative facilities for higher education and for the training of technical personnel in the United States created a situation in which its universities (and those of other countries in a comparable stage of development) expanded their facilities to prepare young men and women for careers that would be entirely outside the curricular patterns of European universities. The American philosophy of widespread education to prepare men and women to play a full, and rewarding, role in the development of a democratic society (which stems from Benjamin Franklin and Thomas Jefferson) was also a powerful force, making it incumbent upon the community to provide the opportunity for university education to *all* those young men and women who were qualified for admission and eager to study for a career.

The dramatic turning point in American university development occurred little more than a century ago when the Congress of the United States passed the Morrill Act, of 1862, to encourage each of the State governments to create 'land-grant universities'. The Act provided grants of land owned by the Government of the United States for the endowment of universities or colleges ' "where the leading object shall be, without excluding other scientific and classical studies . . . to teach such branches of learning as are related to agriculture and the mechanic arts . . . in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life".

'. . . there was a close connexion between the land-grant college movement and the emerging American industrial society. "The proliferation of railroads, canals and roads and the development of the telegraph increased the need for technicians and technically trained managerial talent." By the 1850's the industrial potential of the United States was as apparent as its agrarian past, and there emerged a growing awareness that a new age required new training and new preparation. What were lacking, however, were any certain institutional foundations upon which to erect programmes of agricultural and mechanical training as well as any deeply held respect for expertness . . .

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[1] Harbison and Myers, op. cit., p. 152.

[2] See: Robbins, *Report of the Committee on Higher Education*, p. 12, footnote, for the way in which all of these percentages are calculated.

[3] ibid., p. 44-6.

The land-grant colleges and universities met this need and, in so doing, made a contribution to the *economic* development of the United States that the older universities of Europe were not called upon to make to the development of their countries because of the existence—and the high standards—of the specialized institutions that have already been mentioned, as well as the older patterns of apprenticeship in such fields as accountancy, engineering and industrial technology. Between 1889 and 1922, 72 per cent of all the graduates from land-grant colleges or universities in the United States obtained their degrees in the fields of agriculture, engineering or home economics,[2] while many of these institutions also assumed substantial responsibility for the training of both primary and secondary school-teachers.

Special emphasis, must, however, be placed on the fact that these land-grant colleges and universities undertook to extend teaching responsibilities far beyond the traditional limits that had become familiar to the older universities of Europe. Over and above the educational programme that they offered to full-time students in search of a degree, the land-grant universities made outstanding contributions to the upgrading of technical manpower by their agricultural extension service to help farmers to improve their crops, by agricultural experiment stations and by extension programmes of adult education offered to both agricultural and industrial technicians. In effect, the American university combines within itself the functions of the European university, those of the great specialized institutions of higher education that have been described and some of the training provided in European countries by patterns of apprenticeship. As a result of these innovations, the total contribution of universities to the development of the United States—economic, political and social—is inestimable, but in the process of meeting the needs of the community they transformed themselves into what Dr. Clark Kerr has recently called a 'multiversity'.

'As an institution, it looks far into the past and far into the future, and is often at odds with the present. It serves society almost slavishly—a society it also criticizes, sometimes unmercifully. Devoted to equality of opportunity, it is itself a class society. A community, like the mediaeval communities of masters and students, should have common interests; in the multiversity they are quite varied, even conflicting. A community should have a soul, a single animating principle: the multiversity has several—some of them quite good, although there is much debate on which souls really deserve salvation.

[1] Harbison and Myers, op. cit., p. 148-9. This book contains a concise appraisal of the contribution made by land-grant colleges and universities to the economic development of the United States during the past 100 years, as well as reference to more extensive studies.

[2] ibid., p. 150.

'The multiversity is a name. This means a great deal more than it sounds as though it might. The name of the institution stands for a certain standard of performance, a certain degree of respect, a certain historical legacy, a characteristic quality of spirit. . . . Protection and enhancement of the prestige of the name are central to the multiversity. . . .

'It is also a system of (independent) government, like a city or a city State: the city State of the multiversity.'[1]

The United States in the mid-nineteenth century, when this transmutation of its universities began, was a country in the earlier stages of economic development. Canada, during the first quarter of the twentieth century, was in a similar situation and copied much of the American pattern. Canadian universities assumed the same responsibility for educating agricultural and technological manpower: they undertook similar extension programmes. In Canada, too, the universities assumed a wide responsibility for cultural and political education that would help men and women to play their full part in the development of a democratic society. As the Massey Report points out:

'It would be a grave mistake to under-estimate or to misconstrue the wider and indeed universal functions of [the universities]. . . . They are local centres for education at large and patrons of every movement in aid of the arts, letters and sciences. They also serve the national cause in so many ways, direct and indirect, that theirs must be regarded as the finest of contributions to national strength and unity. . . .

'University libraries, conservatories of music, collections of pictures, films, gramophone records, museum materials of all sorts are placed at the disposal of the public in that hospitable spirit which is in the university tradition. In isolated regions, where such facilities are few, the universities not only serve their immediate neighbourhood as best they can; they try despite all handicaps to refuse no request for help lest a serious student be discouraged. . . .

'There is no lack of variety in the services of a Canadian university. The transition from a critical edition of an obscure mediaeval poet to the organization of a young farmers' club is a formidable one. But the university makes it. There is no one else to do these things. However inadequately they may be done, the university has gallantly met the challenge of a new country to do everything it can and to do it immediately. Throughout Canada, it represents to the community every aspect of cultural life from "grass roots" to "ivory towers". Were our universities to close their doors except to the formal academic student, local effort in the intellectual and cultural field would lose much of its life and spirit.'[2]

Because the experiences are so recent as to be within the memory of people still alive, it may be pertinent to this discussion (and to the present problems of South-East Asia) to cite a few examples of the response made by McGill University—the Canadian institution with which I am most familiar—to some of the needs of the community.

In 1908, as a result of the inspiration and generosity of Sir William Macdonald (a far-sighted businessman who later became chancellor of McGill University), a dependent residential college of the university was established in the farming community 25 miles from Montreal for the express purpose of preparing young men and women for careers in agriculture, domestic science and school-teaching. Most of the population of Canada was rural in those days; much of it was engaged in agriculture. Macdonald firmly believed that the future development of the country depended upon the quality of its homes, its farms and its schools, and that the finest possible education should be offered, in a rural environment, to the young men and women who would in due course become farmers, home-managers and teachers. In each of those fields, moreover, the university offered (in addition to the four-year course leading to a degree) shorter courses of one or two years, leading to a diploma, in order to provide practical training for those who did not need (or could not undertake) the regular programme of higher education.

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[1] Clark Kerr, op. cit., p. 19-20.

[2] *Report of the Royal Commission on National Development in the Arts, Letters and Sciences*, p. 132-4 (Ottawa, The Kings Printer, 1951).

As a logical development of this ideal, Macdonald College carried on for many years a rural adult extension programme to serve the residents of small rural communities which, prior to 1939, were usually isolated by snow and ice during the long winter months. Radio programmes were broadcast from the college and leading citizens of each of the villages organized local meetings at which those lectures could be discussed. Travelling libraries of books and films were sent out where possible, by railway and aeroplane, to these village groups, and during the summer months the leaders of all such groups were brought together at the college to plan the programme for the next winter.

In a completely different area, it was realized in the early 1940's that Canada was desperately short of physiotherapists: the Faculty of Medicine organized a diploma course that would enable young women to qualify themselves for this profession. When large numbers of radio mechanics were needed to construct, and operate, the newly invented radar installations, the Department of Physics developed a one-year training programme for young men destined to undertake these tasks. As it became apparent that the development of medical science and the growing complexity of modern hospitals demanded senior personnel with much greater knowledge than that provided by traditional programmes, arrangements were made for a four-year course leading to the degree of Bachelor of Nursing and for special training in hospital administration for physicians or surgeons who sought a career in that field.

These are but a few examples from the recent history of one Canadian university. They could easily be multiplied from other institutions and other countries, but perhaps enough has been said to indicate that universities during the seven centuries of their existence have, in response to the needs of the communities they serve, developed in widely different patterns. In particular, we must be continually conscious of the contrast between the universities of France or the U.S.S.R., surrounded by a galaxy of institutes and *grandes écoles*, and the 'multiversity' of North America that is expected by the community to undertake a much wider range of activities.

Such diversities of structure, or in the detailed patterns of university curricula, tend to obscure the fact—reiterated here with the greatest possible emphasis—that all universities are alike in performing the three basic functions illustrated from their history in earlier paragraphs. Every university is responsible to its community for the highest level of teaching; for the conservation and dissemination of the heritage of knowledge and culture; for research to expand continuously the horizons of the mind of man.

Among these functions, however, there is nowadays a good deal of argument as to their relative importance and a growing concern lest the contemporary enthusiasm for research (supported in most countries nowadays by generous financial grants from governments and other sources outside the university budget) should impair the university's ability to perform the other two functions satisfactorily. 'It is in the nature of things that research should bring [to the professor] certain kinds of rewards more predictably than does teaching. The able researchers, through publication, gain national reputations. But the able teacher is rarely known, as a teacher, beyond his own college or university. Good teaching is not only a relatively private performance, but it resists measurement.'[1]

This tendency to emphasize research, especially in the fields of science and technology, is world-wide in our generation because such research—whether to improve the rice-harvest or to develop a space-craft that can land on the moon—has an obvious impact upon national productivity and national prestige. But economic development, important as it is, must not be allowed to overshadow the need for the political and social development of mankind, especially at a moment in history when technology is shrinking the physical size of the world, in terms of communication and transport, to a single community more intricately linked than was any nation-State a couple of centuries ago.

Good teaching, and the re-interpretation to each new generation of the heritage of culture, are vital to the concept of a university. Mr. Ortega y Gasset in his *Mission of the University* is so vehement on this point that he would like to see scientific research excluded entirely from the university and carried on in independent institutions.

'The trend towards a university dominated by "inquiry" (research) has been disastrous. It has led to the elimination of the prime concern: culture. It has deflected attention from the problems of how best to train future professionals for their professions. . . .

'Men endowed with this genius [to integrate knowledge and to teach] come nearer to being good professors than those who are submerged in their research.'[2]

Not everyone will want to push the argument this far. The man with the inquiring mind, who spends some of his time on research and is in touch with the research of others, is apt to be a more stimulating teacher than a man untouched by the restless spirit of inquiry. Each of the three functions that have been mentioned is essential to a true university—but good teaching deserves a great deal more emphasis than it receives in many institutions at the present time.

Fundamentally, the university must be to the community what the teacher is to the school. It must establish, and maintain, standards of intellect and morality. It must ensure that all of its students are deeply familiar with the general culture of the age in which they live, with the historic traditions of their people and with a comprehension of their physical environment. It must force men to think, to search for evidence and, when found, to appraise it critically. It must help men to understand the problems of others—no matter where they be or of what race and colour. It must, in fact, produce men and women who are good citizens. All this the university must do and, in addition, it must teach young men and women the knowledge that will enable them to qualify for useful careers. To quote a letter that came to me from a colleague, himself an outstanding university teacher: 'We must derive our scale of values from the content of what we teach. Any scale of values which is based elsewhere—religion, patriotism, culture, a classical past—will always be alien and suspect. But the pursuit of knowledge, with the ruthless honesty of research, on the one hand, and the patient readiness to learn from the great men of the present and the past, on the other, together with the imaginative sympathy that all good teaching requires in order to communicate with the student mind, can provide its own scale of values, and thus be restored to an open and unashamed role in education the world over. Both in theory and in fact those values would draw upon religion, culture and nationalism in different degrees in different lands, but the authority for those values would derive from the act of education itself.'

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[1] *The Flight from Teaching*, p. 5 (New York, Carnegie Corporation, 1964). This document analyses, with deep concern, the shortage of good university teachers in the United States, and the need for immediate efforts to meet the still greater need for such teachers that will result from present programmes of university development.

[2] Ortega y Gasset, op. cit., p. 62, 72.

Meditation upon this point evokes another that is equally important. It is essential that a university should teach well: it is equally important that it should have the power to decide what it can most effectively teach—how it can best use its resources of staff and equipment in the service of the community. To meet an emergency situation, a university may (as was mentioned earlier) institute a programme to train radio mechanics. It has competent staff and equipment at hand: the task is finished in a year or two. It would be entirely different if—to cite an hypothetical example—a university were required by the community to offer technical training in the assembly and routine maintenance of tractors as a regular part of its continuing programme. Such training is important in an agricultural community but it is doubtful whether it represents the wisest use of the limited resources of the university. It does little to make a man think critically and still less to help him to understand his fellow-man. It does little to develop his character and contributes nothing to his ability to play his part in the political life of his community. It is not the function of a university to provide routine technical training as a part of its permanent programme. Each university must endeavour to use its resources in patterns of education that develop the mind and mature the character of the student—and must have sufficient autonomy to make its own decisions in this matter.

Against the general background of the preceding discussion, is there anything that can helpfully be said in regard to universities in the seven[1] countries of South-East Asia with which this report is specifically concerned? The recommendations for each of these seven countries that appear in Guy Hunter's report on *High-Level Manpower for Development* need not be repeated here, nor is it appropriate to comment on them, but some general reflections on the future development of the universities of the region may be relevant since many of the problems that they face are similar to those which exist in developing countries all over the world.

From the available data it is not easy to draw a sharp distinction between

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[1] See footnote 2, p. 492.

TABLE VIII. Universities and other institutions of higher education in seven countries of South-East Asia

Country	Population (millions)	Student enrolment (thousands)	Total number of institutions of higher education	Date of creation of institutions of higher education					
				1945 or earlier	1946-50	1951-55	1956-60	1961-65	Date not listed
Burma	23.0	16.1	7	1	—	—	1	—	5
Cambodia	5.7	1.5	9	—	—	—	5	4	—
Indonesia	99.4	90.0	39	2	4	10	15	3	5
Malaysia[1]	9.2	5.6	14	3	1	4	4	2	—
Philippines	29.0	234.2	34	19	8	3	2	2	—
Thailand	28.8	17.0	19	7	—	5	5	2	—
Viet-Nam	14.8	16.5	9	1	1	3	3	1	—
TOTAL	209.9	380.9	131	33	14	25	35	14	10

Sources: Details regarding institutions are taken from *International List of Universities and Other Institutions of Higher Education* (Paris, International Association of Universities, 1963). Population and enrolment statistics are taken from Guy Hunter, *High-Level Manpower for Development*, Table III.

[1] Including Singapore.

Editor's note. A much wider definition of 'institutions of higher education' with a consequential increase in all magnitudes has been adopted in the body of the report.

universities and other institutions of higher education, so that both are included in Table VIII below, from which some interesting conclusions can be drawn. In terms of the number of students enrolled, both absolutely and relative to the size of the population, the Philippines stands in a class by itself—reflecting its absorption of the American philosophy of higher education during more than half a century of close association with that country. This association, and the earlier association with Spain, is also apparent from the fact that more than half of the institutions of higher education now operating in the Philippines came into existence before 1945. Some, like the Catholic University of San Carlos (founded in 1595), are venerable universities by the standards of any country in the world, while the National University and several others, although much younger, have more than half a century of solid experience. The only other country in the region that has a tradition of higher education ante-dating the First World War is Thailand—reflecting the decision of King Mongkut a century ago to introduce Western patterns of education into his country.

If the figures for the Philippines and Thailand are deducted from the fifth column of Table VIII, it is apparent that only seven of the other institutions now operating in the region were created before 1945. These were universities on the traditional patterns of western Europe set up by the colonial powers—a British type of education in Burma and Malaysia; Dutch in Indonesia; French in Cambodia, Laos and Viet-Nam. Enrolment was severely restricted in all of these institutions prior to the Second World War, and academic standards were high —so high indeed that the professional qualifications of graduates were automatically recognized as equivalent to those obtained from older European universities.

During the past twenty years there has been a tremendous expansion in the facilities for higher education within the region, at differing rates in different countries, and, in addition to the diverse types of university already mentioned, the Chinese educational pattern has led to the creation of Nanyang University in Singapore and a new Chinese-language university in Hong Kong. Others may follow. Moreover, although detailed statistics are not available, it would seem that steadily increasing numbers of young men and women from all the countries of this region are travelling to study in universities in other parts of the world. Even when allowance is made for the high rates of 'wastage' in some countries —for the students who embark on a course of higher education with great enthusiasm but, for various reasons, fail to complete that course and earn a degree—there has been over the past two decades a rapid expansion in the number of university graduates in each of these countries. It seems likely that the number will continue to increase, at an accelerating rate, during the years immediately ahead of us.

There is evidence, however, that this expansion of higher education has been accompanied by a serious decline in academic standards in many, if not all, areas. Professor Caesar Espiritu, of the Far Eastern University in the Philippines (founded in 1934), points out in *The Asian University Today*[1] that:

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[1] I have not been able to obtain a copy of this book. The quotations that I have taken from it are embedded in a review published in *The Student*, Netherlands, Vol. VIII, No. 19, September 1964, p. 17-19.

'. . . under the urgent and insistent compulsion of industrialization, intellectualism is losing out to utilitarianism in the Asian university . . . which has turned out thousands of young men and women skilful in running factories and machines but insensitive to the great needs of mankind. . . . Pressed by the pragmatic demands of an increasingly acquisitive society, the university has not combated successfully the diminution of its influence in shaping the life of society, and it is natural that, in this situation, the wielders of political and economic power have moved in and arrogated to themselves the task of making the most momentous decisions for society.'

This is a serious challenge. When one recalls the great part that the older universities of Europe have played in moulding the life of that continent since the thirteenth century, or the impact of American universities on the development of the United States during the past century, it is apparent that the universities of South-East Asia have a great task to perform. Stemming, as many of them do, from a European culture that is alien to their present environment, they must seek to preserve what is good from their European traditions and to integrate it with the cultural heritage of the countries they now serve. The universities must become the keepers of the nation's conscience, re-interpreting ancient traditions to each generation of students with a clear and balanced understanding of the realities of the contemporary world. To do this, they must maintain high academic standards, which sometimes requires great courage, and insist that their job is to educate the whole man—mind, body and spirit—rather than to offer short cuts to technical expertise. Let me repeat: this will take great courage on the part of those responsible for the formulation of university policy, but no university has grown great and served its country well unless it had the courage to fight for those things that are fundamental to its existence. Universities are not peaceful places: they are the battlefields on which the future pattern of society is decided. Let us remember that political development and social development are as important, in every country, as economic development: progress demands that all three march together. To quote Professor Espiritu again, since he has greater knowledge than anybody from outside the region can hope to possess: 'In spite of all the guarantees enshrined in their constitutions, the fact remains that these young countries cannot achieve real constitutional democracy without a deep consciousness of, and belief in, personal dignity, and without mass participation by the people in the political process. . . . Western style democracy must be modified so that the Western values of freedom and human rights can be interpreted in such a way that personal dignity is emphasized and the Asian urge for economic progress and social justice satisfied. . . . [The Asian university], unable to define its nature and function in the Asian setting, has not produced intellectuals who can identify themselves with the masses.'[1]

Quite clearly, once they have accepted their proper role, the first challenge that confronts the universities of South-East Asia (as well as those in many other parts of the world) is the establishment and maintenance of high standards of attainment for those who seek admission, and first-class teaching during the years that these students spend within the walls of the university.

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[1] *The Asian University Today*, see footnote on p. 504.

But high standards of admission can be demanded only when the country has developed a good system of secondary education—and this calls attention to a second challenge that confronts every developing country. Looking backwards over seven centuries of university history, it has become apparent that the precise contribution that a university can make to its community differs from time to time and from one country to another. Conditions in the countries of South-East Asia today bear closer resemblance to those in the United States in the early nineteenth century, or in Canada fifty years ago, than they do to the conditions found to exist in western Europe at any time since the first universities came into existence. The urgent need is for well-educated secondary school-teachers, especially in the rural areas; for agricultural experts who are willing to live in the villages and help the farmers to improve their productivity; for engineers who are willing to spend their lives developing the infra-structure of roads, canals, communications and irrigation systems, often in the least-developed parts of the region; for doctors, public health officers and nurses, especially in rural areas. The university can, and should, provide educational opportunities for young men and women who are willing to take up these careers, but two collateral developments would greatly aid it in this task. In the first place, it would seem desirable to establish in rural areas affiliated colleges like Macdonald College, of McGill University, which was mentioned earlier. Young men and women who are educated in a rural environment are more likely to return to their farms and villages than those who have spent several years in the novel and fascinating atmosphere of a large town. This has been true for centuries, and it is easier to adapt one's plans to the traditional reactions of youth than it is to change human nature. The second collateral aid to the university in its work would be a pattern of incentives that indicates realistically the government's recognition of the urgent need for qualified people who will do these jobs—incentives that range from the provision of special scholarships to young men and women who promise to undertake them up to a salary pattern for graduates which does not place the man or woman who does this kind of work at a disadvantage when compared to his fellow-student who gets a government job in the capital city or is taken on by an urban industry.

Each country must decide for itself what proportion of its national income it can afford to spend on higher education, but if the amount made available for that purpose is not enough to provide university education for all who seek it, steps must be taken to see that those candidates who want to prepare themselves to meet the urgent needs of the community receive a preference.

A third challenge to the universities of South-East Asia is also apparent when one remembers the similarity of conditions within this region to those in North America at an earlier stage of development. Nobody can measure the contribution to North American development of the agricultural extension programmes and the adult education programmes that were undertaken—and are still carried on—by universities simply because there was no other institution competent to do the job. By means of frequent visits by members of the teaching staff to communities far away from the university campus, by correspondence courses, by the effective use of radio and television, the university can spread its influence to numbers of people much greater than its full-time student body, and so aid the development—economic, political and social—of the community that it serves.

It is worth mentioning in this context that the U.S.S.R. is today placing increased emphasis on such programmes because part-time students do not become as dramatically separated from their home and village environment as the young men and women who spend several years in residence at a distant university.

A fourth challenge, that of language, needs only brief mention here because it is treated extensively in the report by Dr. Noss. At this moment in history the accumulated body of human knowledge, and the latest discoveries of research, are readily available to anybody familiar with the English or Russian languages. They are less readily available to people ignorant of both these languages—although there are wide differences between what is available in, let us say, Swedish and what is available in Swahili. The example of European universities in the earlier stage of their development is significant. In all the countries of South-East Asia national languages will be increasingly used in primary and secondary education: in a very short period they will, in fact, become the sole medium of instruction. Even in the field of higher education it is inevitable that the national language will be used to an increasing extent, but it should be emphasized that university students (especially in the fields of science and technology) will need for many years to come to be deeply familiar with at least one of the recognized languages of international communication. A knowledge of English or Russian is today the essential key by which the professor—or the student—can unlock the world's treasure-house of knowledge and use it in the service of his own community.

The fifth, and final, challenge to the universities of South-East Asia can be summarized in two words: co-operation and specialization. The two are opposite sides of the same medal, and once again the history of the earliest chapters of university development in Europe—the eminence in law of Bologna and of Salerno in medicine, for example—sheds light upon the problem. Every university cannot be outstanding in every subject, but there are so many problems common to all parts of the region that at least one university in South-East Asia should become outstanding in regard to each of them. The development of agriculture demands biologists, soil chemists, geneticists and plant pathologists, to cite but a few of the sciences that are now involved. Public health requires that there should be outstanding schools of medicine and of nursing that give particular attention to the problems of tropical and sub-tropical areas. Training and research at the highest level are urgently needed in the fields of education and linguistics.

It is not for me to suggest the particular university at which any one of these specialities (or many others) should be developed to a level that makes that institution rank among the most eminent in the world. What does need emphasis is that inter-university co-operation will be essential if any institution in South-East Asia is to attain that status. In the first place, there must be close co-operation with eminent universities outside the region in order to develop the particular department or institute, and at this moment in history many of the great universities in the U.S.S.R., in western Europe or in North America are in a position (with financial support from the government of their country) to offer such co-operation. In the second place, there must be co-operation among the universities of South-East Asia to make use of the specialized facilities thus provided—to send students (and teachers) for advanced study, to refer difficult problems for investigation, to make available information that may be needed as the basis of advanced research and, in some cases, to pool financial resources for a concerted attack on some major problem of general importance. At all periods in their history, and in all parts of the world, universities have gained strength and aided their own development by close co-operation with one another. Nothing in the available evidence suggests that South-East Asia can be an exception to this rule.

These five challenges confront the universities of all countries in South-East Asia at the moment. Quite clearly (to repeat an earlier statement), the community, through its leaders in government and in business, must decide upon the specific kinds of high-level manpower that are most urgently needed. Equally clearly, each university must be free to decide how best it can use the resources available to it in the task of meeting these manpower requirements. But when both of these conditions are granted, each university in the region is confronted with the challenge: (a) to strive for academic excellence; (b) to direct its programmes toward the education of those types of high-level manpower most urgently needed by the communities it serves; (c) to extend its educational effort to groups of people who are not, and cannot become, full-time students; (d) to use the national language in its teaching to as great an extent as is possible, while insisting that its students are able to use one of the languages of international communication in their studies; (e) to co-operate in the effort to develop within the region institutions, in each important field, that are of international renown.

These are the challenges to each university in the region—but they are not peculiar to the universities of South-East Asia. They are the challenges that confront every university in the world today, although the emphasis among them may vary from one country to another. Upon the success with which universities meet these challenges depends in no small measure the future health, welfare and happiness of all mankind.